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KATA PENGANTAR

بِسْمِ اللهِ الرَّحْمَنِ الرَّحِيْمِ

Assalamualaikum Wr.Wb
Alhamdulillahirabbil'alamin,

We are grateful that Allah still endows us with healthy favours because it might be one of the greatest pleasures today. This blessing is considered the greatest favour since many people around us, such as our neighbours and even our relatives, cannot enjoy it. It is undeniable that we are currently facing a very tough time. We are presently being tested with a variety of limitations, such as communication limitations and other limitations. It is none other than because, at this time, we are through the same situation, namely feeling the impact of the COVID-19 pandemic.

Hopefully, these various limitations will not be an obstacle for us to continue to share with others and not the other way around; it becomes our excuses not to innovate or rise looking into the future. Therefore, one of our few contributions from the Statistics Study Program of Universitas Islam Indonesia sought to assemble the ideas to reach out hope during this pandemic is summarized in the COVID-19 anthology.

In accordance with the Statistics Study Program's vision, Statistics Study Program becomes a leading study program in producing data analysts who have integrity and enthusiasm and can advance society. It is hoped that a few ideas from the authors can later increase insight, hope, enlightenment, and even motivate the readers. This work is published to provide insights, concepts, ideas, or even lessons that can be obtained from the COVID-19 pandemic this time.

Hopefully, this simple work will be of fair use to readers.
We would like to thank all those who have worked hard in preparing, collecting ideas, writing, correcting, and improving this work to be published.

Wassalamualaikum wr. wb.

Yogyakarta, 2021
Head of Statistics Department /Study Program
Universitas Islam Indonesia

Dr. Edy Widodo, S.Si., M.Si

DAFTAR ISI

THE DIVISIVE ANALYSIS (DIANA) ON COVID-19 RISKS IN PROVINCE IN INDONESIA

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ABSTRACT

Coronavirus Disease (COVID-19) is currently spread evenly in Indonesia. Since it first appeared on March 2, 2020, the government has implemented many policies from the Large-scale Social Restrictions (PSBB), socialization of health protocol, to risk zonation of COVID-19. In fact, the spread of the virus continues to this day and is increasing. For this reason, it is necessary to have a big picture to form a broader group of regions, that are provinces which have the highest to the lowest risk of transmission. In this study, 34 provinces were grouped based on the number and ratio indicators set by the government which later, by using the Divisive Analysis method (DIANA), a group of provinces with a high to low-risk level of transmission were obtained. The analysis shows that there are 5 high-risk provinces, 12 medium-risk provinces, and 17 low-risk provinces.
Keywords: COVID-19, Clustering, DIANA

A.   INTRODUCTION

Coronavirus Disease (COVID-19) which appeared at the end of 2019 and initially emerged in China's Hubey Province has now become a global pandemic. The first positive case of COVID-19 was confirmed in Indonesia on March 2, 2020 in the city of Depok, which until now the outbreak has been evenly spread to all provinces in Indonesia. In order to reduce the growth rate of this infection, the government has implemented a series of policies starting from the implementation of Large-scale Social Restrictions (*Pembatasan Sosial Berskala Besar (PSBB)*), socialization of health protocol, determining the terms for naming the patient's status, and risk zonation of COVID-19. The zonation is continually updated every week by the government through Indonesian Task Force for the Acceleration of COVID-19 Handling (*Tim Gugus Tugas Pecepatan Penanganan COVID-19*). The regional risk zonation map is calculated based on 3 (three) public health indicators using scoring and weighting. The three indicators used include: epidemiological indicators, public health surveillance indicators, and health service indicators.

Epidemiological indicators refer to the trend in the number of confirmed, deceased, and treated cases. Public health surveillance indicators relate to the public health system which carries out monitoring duties, such as sample tests, population mobility, and physical contact tracing. Health service indicators focus on the availability of care facilities for patients in the form of beds, referral hospital facilities, and Personal Protective Equipment (PPE). The risk zonation is the result of the calculation of those three indicators in the form of assessment, weighting, and addition for each regency or city which is subsequently categorized into four main risk zones. The four zones are: high risk zone, medium risk zone, low risk zone and no impact zone. The categorization is denoted in the form of zonation colors in order to facilitate public understanding. High risk zones are indicated as red zones,

moderate risk zones are represented as orange zones, low risk zones are often represented as yellow zones, and non-impact zones are referred as green zones.

The risk zonation that is always been updated at the regency level is very helpful for each regent or mayor in monitoring the latest risk level. Apart from these advantages, in the reality, there are many people who still ignore the health protocol even though they are in the red zones. This is due to the fact that zonation within the scope of the regency or city is volatile, so that people do not easily fully understand the information. Meanwhile, from the central government side, the direction of aid policy is hampered due to the absence of an overview of the priority provinces which are prioritized to receive the aid. These obstacles have resulted in the policies that overlap with the provincial policies in COVID-19 handling coordination at the regency or city level. For this problem, a wider grouping of areas will be carried out based on the three zonation indicators by examining the similarity of the characteristics using Divisive Analysis (DIANA).

B. METHOD AND ANALYSIS

B.1. METHOD

Cluster analysis is a statistical analysis of multiple variables (multivariate) which aims to classify a group of observed objects into several clusters based on the measure of the similarities between objects, so that objects in a particular cluster have a higher similarity than objects outside the cluster. Cluster analysis is a descriptive analysis and is one of the exploratory techniques as the results of field data calculation. Cluster analysis, in its process, uses a measure of the similarity or proximity between objects as a basis. The higher the measure of the dissimilarities between objects, the greater the differences in the characteristics of the two objects that cause them to have higher tendencies to be in the different cluster. The benefits of clustering are for data exploration, reduction and layering. Data exploration serves to get an illustration of the data set information so that it can generate hypotheses in seeing the population structure. Data reduction is useful for summarizing and simplifying object members into several clusters that are formed. Layering data is more functional in the process of stratification of object sampling.

There are various kinds of clustering techniques, one of which is the divisive method. This is a hierarchical technique which division starts in a cluster containing all existing objects. This cluster branches into two clusters, then each cluster is further divided into two clusters, and so on. Objects that do not have the highest similarity will be separated in order to form a separate cluster. The distance measurement that is often used in divisive analysis is the Euclidean distance. Below is the equation:

$$d(x,y) = \sqrt{(x_1 - y_1)^2 + (x_2 - y_2)^2 + \ldots\ldots + (x_p - y_p)^2} \tag{1}$$

$d(x,y)$ is the Euclidean distance from the distance between two objects x, y with x_i, y_i respectively showing the difference between the objects in the ith variable. The Divisive Method focuses on

calculating the average distance of each object outside the cluster with the objects inside the cluster group and calculating the average distance of every object inside the cluster itself; hence, it is called the Splinter Average Distance Method. Below is the following equation:

$$\overline{x}_k = \frac{1}{n-1}\sum_{k=1}^{n} x_k \tag{2}$$

Where $\overline{x}_k$ is the average of the *k*th objects, whereas x_k are the values of *k (k = 1,2,3,…, n)* where *n* is the number of objects. Hierarchical cluster analysis is generally in the form of a tree diagram or dendrogram which serves to visualize the information on the measure of the dissimilarity between objects. The clusters that are formed can be further analyzed, especially inference analysis, for example the average test of several independent populations to see whether each cluster is significantly different from other clusters or not.

B.2. ANALYSIS

Data were taken from Indonesian Task Force for the Acceleration of COVID-19 Handling on August 6, 2020, and the objects of grouping were 34 provinces in Indonesia. Factor components which were used include the number of confirmed cases (confirmed); the number of deaths (death); the number of recoveries (recover); the number of referral hospitals (hospital); population density (density); epidemiological indicators (Rt); indicators of public health surveillance, namely isolation room ratio (r_iso) and referral room ratio (r_rujuk); and health service indicators, namely the ratio of WHO standard tests (who_test) and the quantity of tests per day (test_day).

Table 1. The COVID-19 Factor Component

provinces	confirmed	death	recover	hospital	density	Rt	r_iso	r_rujuk	who_test	test_day
Aceh	483	18	91	2	86	1.01	0.8	5	6.91	21
Bali	3644	48	3168	4	718	1.04	1.2	5.3	7.67	588
Banten	1979	94	1455	2	1237	1.04	1.4	2.4	14.05	372
Bengkulu	240	20	135	3	94	1.13	3.2	1	6.32	11
DIY	819	21	497	4	1174	1.06	2.4	7.6	7.31	41
DKI Jakarta	23936	901	15006	8	15328	1.05	2.2	1.8	8.59	5273
Gorontalo	1431	38	915	1	101	0.97	0.4	1.2	3.41	167
Jambi	193	4	116	1	68	1.16	1.6	8	7.11	55
Jabar	6995	217	4252	8	1320	1.05	1.4	4.7	13	2889
Jateng	10151	700	6309	13	1030	1.02	2.6	2.7	6.82	1906
Jatim	24115	1817	16732	11	813	1.02	3.5	2.1	3.89	1848
……………	……	…..	…….	….	….	….	….	….	…..	…..
……………	……	…..	…….	….	….	….	….	….	…..	…..
Sumsel	3602	179	2009	4	88	1.02	2.1	1.9	6.61	193
Sumut	4477	212	1860	5	191	1.02	0.2	1.1	4.48	624

Prior to further analysis, the data from the table were scaled since every factor had a different unit. For example, the unit of measurement for the number of sufferers was a person; it was different from

the unit of measurement for the number of hospitals, population densities, and the ratios in every indicator. The purpose of data standardization was to make the unit of the data equated and had the same distribution.

After standardization was carried out, using the data obtained from 34 provinces, the distance between provinces could be measured by employing the Euclidean distance method. Based on the results of the distance among the provinces, the heat map which is illustrated based on color is presented in the graphic below. If the color gets darker towards the blue, it indicates that Euclidean distance is getting higher or farther. Further Euclidean distance indicates that between provinces has a significant difference compared to the orange colors does. The following is an illustration of the Euclidean distance from each province which is alphabetically indicated.
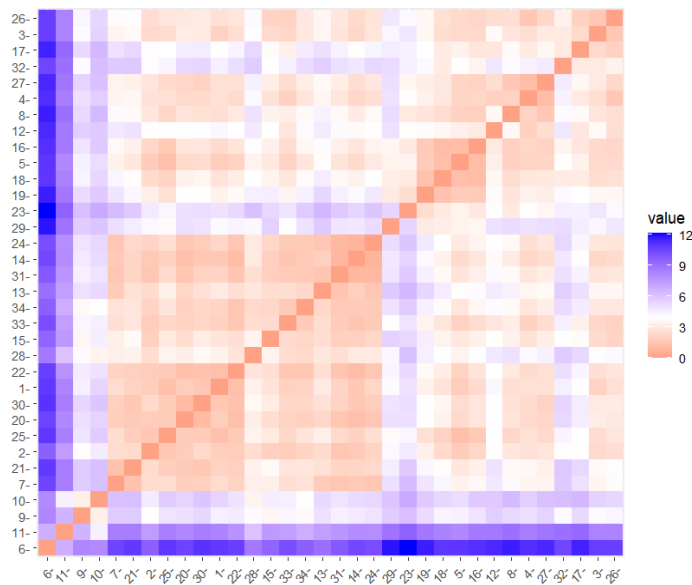
Figure 1. Euclidean Distance Graphic for 34 Provinces

As the example from the chart above, the Euclidean distance between province 6 (DKI Jakarta) and province 29 (Sulawesi Tengah) is far so that later the two provinces have different clusters. On the other hand, Euclidean distance between province 24 (Papua) and province 14 (Kalimantan Tengah) is very close; so, it is predicted that both provinces will be in the same cluster. After calculating Euclid distance, the divisive analysis accuracy coefficient (DIANA) was calculated; the calculation showed the accuracy of the prediction of provincial grouping. From the analysis, the results show an accuracy of 81.23% which means that the analysis is good for grouping 34 provinces.

In respect to the characteristics of the Euclid distance that was previously obtained, the researcher intended to group the 34 provinces into 5 clusters. From the five clusters, it can be seen that there are 3 big groups with the highest risk, namely East Java (Jawa Timur) province, followed by DKI Jakarta, South Sulawesi (Sulawesi Selatan), Central Java (Jawa Tengah), and West Java (Jawa Barat). Other provinces, aside from these five provinces, tends to have a lower risk.
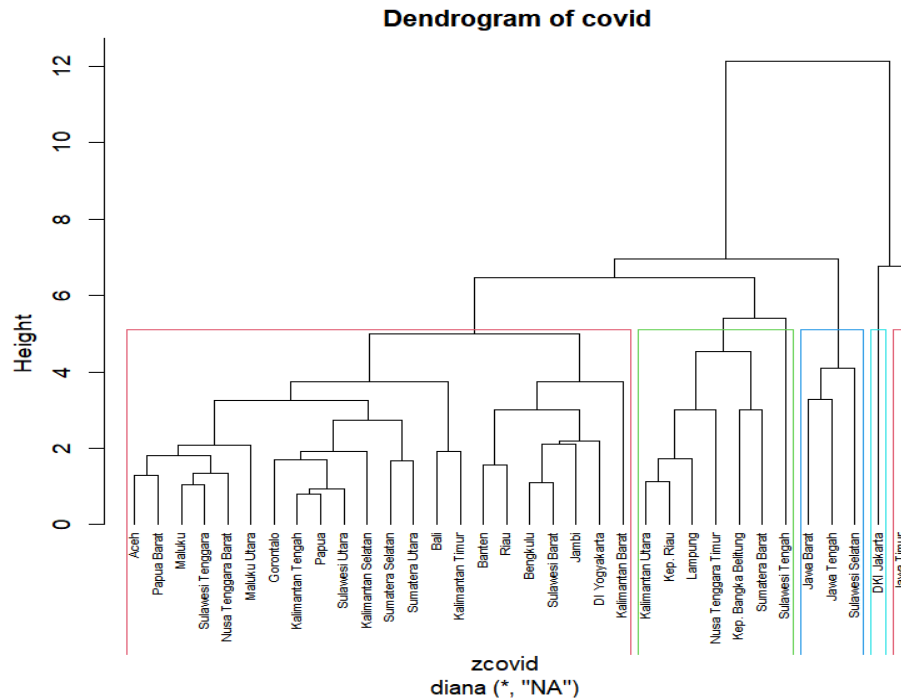
Figure 2. COVID-19 Dendrogram for 34 Provinces

In order to be more in-depth, a further divisive analysis (DIANA) was carried out from 29 provinces outside the five high-risk provinces. The first step was to examine the Euclid distanced of the 29 provinces. Based on the illustration of the obtained Euclid distance result, it could be seen that the distance between provinces are varied. For instance, the farthest distance is in province 9 (Kalimantan Selatan) and province 19 (Nusa Tenggara Timur) which later will have different clusters and the shortest distance is in province 10 (Kalimantan Tengah) and province 20 (Papua) which will likely be in the same cluster.
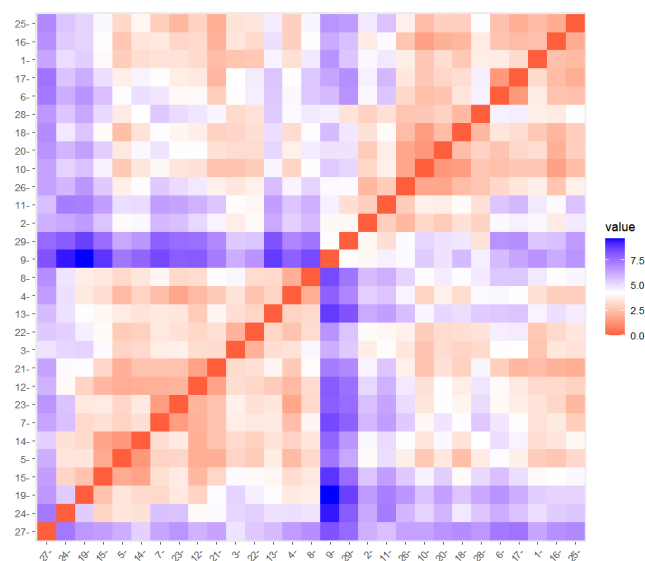
Figure 3. Euclidean Distance Chart for 29 Provinces

The results of the obtained dendrogram shows that there are two large clusters, namely moderate risk and low risk. Moderate risk cluster consists of 12 provinces; meanwhile, low risk one comprises 17 clusters.

Figure 4. COVID-19 Dendogram for 29 Provinces
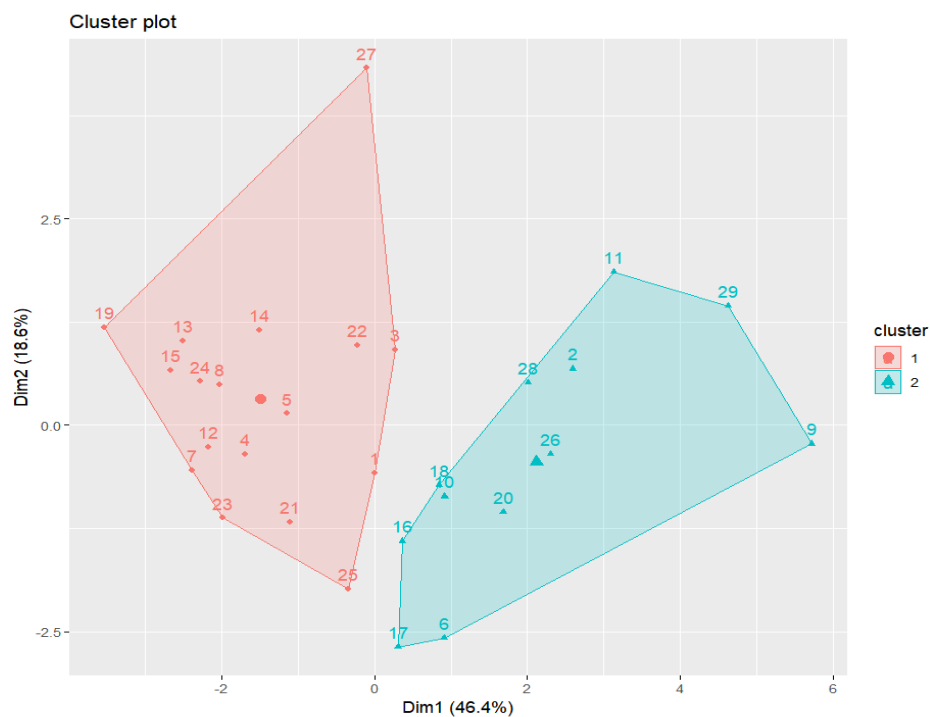
Figure 5. COVID-19 Cluster Plot for 29 Provinces

The next analysis was deciding whether the two clusters had significant differences or not. The appropriate analysis for testing the two clusters was the T-test for comparing two means. Prior the analysis, the characteristics of the data distribution using the boxplot would be examined first.
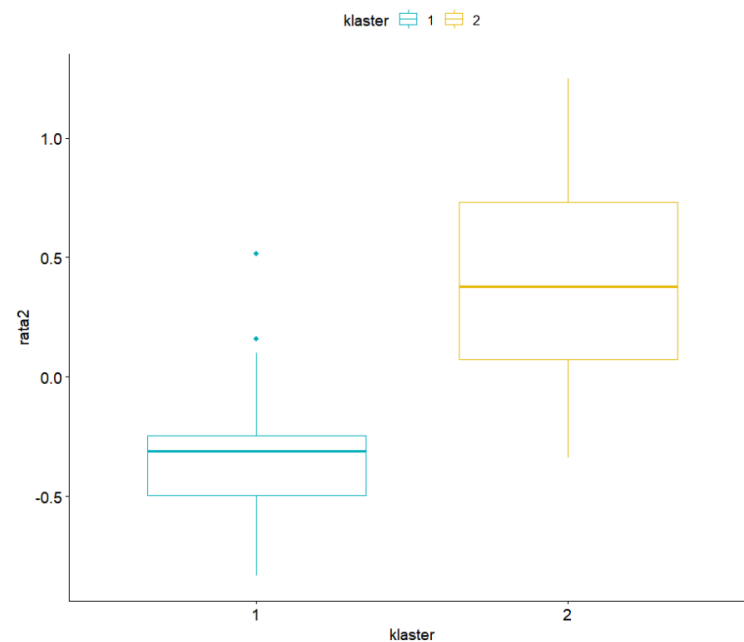
Figure 6. COVID-19 Boxplot for 29 Provinces
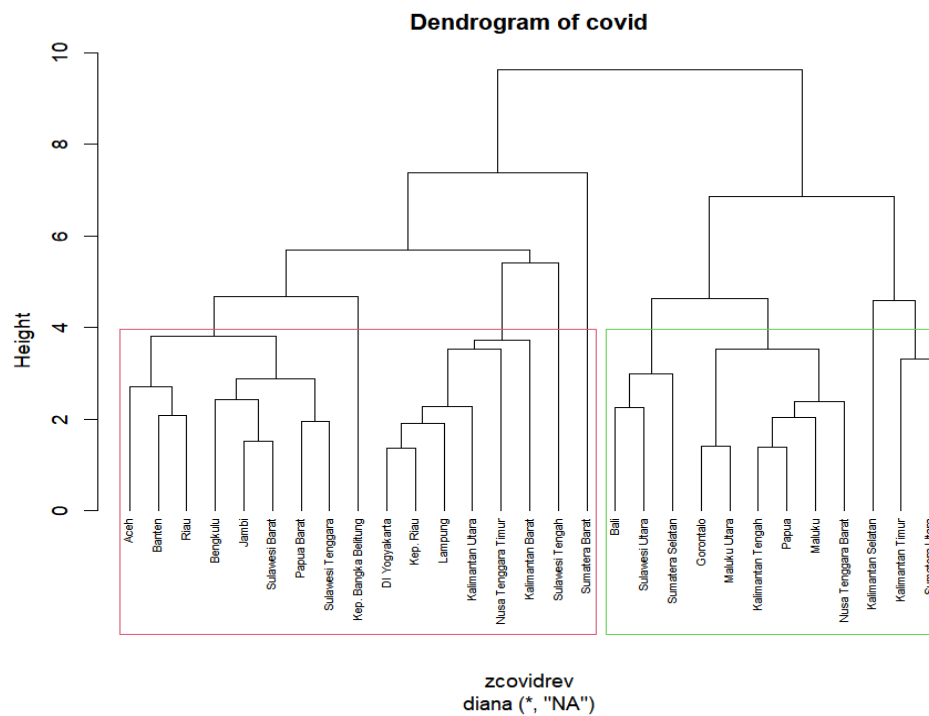
Judging from the boxplot, it appears that cluster 2 has a higher average risk than cluster 1.

Before performing the T-test analysis, examined the data for each province in the two clusters that met the assumptions of normality and variance equality. By using the Shapiro-Wilk normality test, the p-value was obtained: 0.168 in cluster 1 and p-value of 0.963 in cluster 2 with a 95% confidence interval. These results indicate that each cluster has met the data normality assumption. While the variance similarity test using the F test resulted a p-value of 0.1343. It shows that the assumption of variance equality of the two clusters is fulfilled with 95% confidence interval.

The final step was to perform the average test of the 2 clusters, whether they were significantly different or not. From the test results, it is found that the p-value is very small, close to zero. With a confidence interval of 95%, it can be concluded that the two clusters are significantly different. It indicates that Cluster 2 has a greater risk than the risk in cluster 1 is.

Table 2. Summary Test of Cluster

Sample	Test		Statistics	Sig
Klaster 1	Normality	w	0.9233	0.1680
Klaster 2	Normality	w	0.9761	0.9630
Klaster 1, Klaster 2	Equality of Variance	F	0.4422	0.1343
Klaster 1, Klaster 2	Independent- T	t	-4.8776*	4.23E-05*

*rejected null hypothesis, alpha 5%

C. CONCLUSION

From the results of this analysis, a conclusion can be drawn: there are 5 provinces with a high level of transmission risk, namely DKI Jakarta, East Java, South Sulawesi, West Java, and Central Java. As for medium risk areas, there are 12 provinces; on the other hand, low risk areas comprise 17 provinces. After testing the mean test of the two clusters, namely moderate and low risk, it can be concluded that the two clusters are significantly different. It indicates that the areas in Java island are still the epicenter of the spread of the outbreak so that they need an immediate handling. Meanwhile, areas outside Java island have begun to anticipate the outbreak spread by increasing the quality of health services and increasing the number of testing equipment.

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A PORTRAIT OF RELIGIOUS ACTIVITIES IN FACING COVID-19 PANDEMIC SITUATION

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ABSTRACT

Global problems regarding with COVID-19 pandemic should have become serious attention for the world. It is reported that COVID-19 has spread to more than 210 countries and areas, causing more than 195.755 people died and more than 781.109 people recovered. This becomes a shock therapy for mankind in undergoing their daily life, especially their religious activities to protect themselves wherever they are. Almost every sector is affected by the pandemic with its different level and classification. The source of Islamic laws, either Al-Quran, Hadith, or *Ushuliyyah* rules, yields many legal products or *ijtihad* results which are conducted by Muslim scholars in response to the COVID-19 outbreak. Moreover, the essences of plague that had befallen the previous Muslims serves as a stimulation for us to act in critical-scientific ways, aside strengthening our religious practices amid the pandemic. Tactical steps come from the government, religious figures along with Indonesian mass organizations, and COVID-19 Task Force, are expected to be more serious in facing the new normal era.

Keywords: Pandemic, Religious Awareness, and Empirical Awareness

D. INTRODUCTION

Since the end of 2019 until early 2020, many countries have been shaken by the emergence of corona virus or Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). This virus initially emerged in Wuhan, Hubei Province, China in December 2019 and was declared as pandemic by World Health Organization (WHO) on March 11th, 2020. Until April 23rd, 2020, over than 2.000.000 COVID-19 cases have been reported in more than 210 countries and areas, resulting in more than 195,755 deaths and more than 781,109 people recovered.[1]

The impacts of COVID-19 pandemic are global social-economic distortion, sports and cultural events postponement or cancellation, and widespread concern about the lack of goods supplies that cause panic buying. Misinformation and conspiracy theories about coronavirus have spread via online platforms; consequently, xenophobic incidences and racism sentiments toward Chinese and East Asian or Southeast Asian people are arose.[2]

The spreading effect of coronavirus is not just taking thousand lives but also changing the ways people around the world live their life, starting from the interaction among each other to their relationship with God. Some people decide to stay at home while doing their work activities or work from home (WFH) in order to avoid crowded place; they also postpone their traveling to other places.

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[1] https://id.wikipedia.org/wiki/Pandemi_COVID-19. Accessed on 01 July 2020.

[2] *Ibid*

Some other changes their ways of shaking hands and hugging into greeting by using elbows and legs. The coronavirus pandemic also affects religious life of mankind. Some churches, mosques, temples, and synagogues change the ways of the worship in order to hamper the spread of COVID-19[3] by practicing health protocol, social or physical distancing as they have been practiced in many countries around the world.

In Indonesian context, as referring to Al Makin, more religious figures and organizations approve the government's proposal to maintain the common good. It is not uncommon for the proofs of the cooperation of religious figures to be supported by theological proposition so that people all over Indonesia work hand in hand to hinder the virus spread. Beside religious organization such as NU and Muhammadiyah, Indonesian Ulema Council (*Majelis Ulama Indonesia (MUI)*), being fatwa-issuing constitution, issued Fatwa Number 14 of 2020 regarding the organization of worship in the COVID-19 outbreak situation.[4]

Moreover, Hajj and 'Umra pilgrimage are suspended by Saudi Arabia Kingdom as an effort to break the chain of the pandemic spread. In fact, refers to Nashih Nashrullah, religion has given guidance in facing various situations and emergency conditions. Religious guidance which once is obligatory or religious prohibitions that are binding in nature can change into permissible in the case of emergency. *Al-Dharar yuza* or *la dharar wala dhirar* is a religious principle proposed by Islam so that it does not conflict with the religion itself. Surely, it is related to the emergency situation and condition [5] and refers to the concept of *Maqashid Syariah* (the purpose of sharia), one of them is to maintain a life (*hifzun nafs*).

On the other hand, refering to Fathorrahman Ghufron's writing, while mass call is conducted by the government in many countries in order to change the ways of worship that is adjusted to the current emergency condition, which is surely started with a well-planned legal ijtihad process, even in the process, the government involves parties that have qualified knowledge in religion; on the other hand, it appears that some people oppose the religion edicts with contra-productive perspective.[6]

Starting from this point, several global problems related to the COVID-19 outbreak will be explored in this article, starting from discussing how COVID-19 is viewed in Islamic study perspectives, the urgency of religion presence in handling the pandemic, vital aspects in implementing the government policies in practicing new normal era. They will be explored in this writing.

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[3] Lebo Diseko, *Virus corona: Apa dampak COVID-19 terhadap tata cara ibadah agama?*, BBC World Service, 11 March 2020. Can be accessed in the site: https://www.bbc.com/indonesia/indonesia-51813486

[4] Al Makin, *Adaptasi Agama di Era Corona,* Koran Tempo, edition 27 April 2020.

[5] Nashih Nashrullah**,** *Corona dan Cara Beragama Kita*, Republika Daily, Thursday 02 April 2020

[6] Fathorrahman Ghufron, *Virus Korona dan Kegagapan Teologis,* Kompas edition 28 March 2020.

E.   COVID-19 IN ISLAMIC STUDY PERSPECTIVE

As mentioned above, religion has important role for mankind on this earth, especially for Muslim, aside from observing the regulations issued by the government and health experts that are supposed to be complied by every citizen.

There are some references on how Islamic law answers several pandemic problems. Tracing back to the past, in the history of Islam, we can find coronavirus disease or *tho'un* in the era of Prophet Muhammad SAW (*Peace Be Upon Him*), and even long before the Prophet was sent, which was in the era of *Bani Isra'il* when Muslim conquered Iraq and Syria. After the very fierce battle of Yarmuk, Muslim army stayed in Syria. After that, the cholera outbreak struck and brought the death toll to more than 25.000. No wonder if the ulemas, *kyai*, chaplain, researcher and others relate that event to the COVID-19 outbreak since the outbreak, at a glance, share many things in common with COVID-19 which is currently happened and has claimed thousands of people lives.[7]

Thus, Al-Quran, Hadith, and the reference of the ulema become the basis and affirmation toward to the existence of the disease outbreak that often comes and goes. The followings are the legal basis:

1.   Al-Qur'an

In Al-Quran, surah Al-Baqara [2]: 155-156, Allah Says:

وَلَنَبْلُوَنَّكُم بِشَىْءٍ مِّنَ ٱلْخَوْفِ وَٱلْجُوعِ وَنَقْصٍ مِّنَ ٱلْأَمْوَٰلِ وَٱلْأَنفُسِ وَٱلثَّمَرَٰتِ ۗ وَبَشِّرِ ٱلصَّٰبِرِينَ

ٱلَّذِينَ إِذَآ أَصَٰبَتْهُم مُّصِيبَةٌ قَالُوٓاْ إِنَّا لِلَّهِ وَإِنَّآ إِلَيْهِ رَٰجِعُونَ

And We will surely test you with something of fear and hunger and a loss of wealth and lives and fruits, but give good tidings to the patient. Who, when disaster strikes them, say, "Innaa lillaahi wa innaa ilaihi raaji`uun". (QS. Al-Baqara [2]: 155-156)

In the surah At-Taghaabun [64]: 11, Allah says:

مَآ أَصَابَ مِن مُّصِيبَةٍ إِلَّا بِإِذْنِ ٱللَّهِ ۗ وَمَن يُؤْمِنْ بِٱللَّهِ يَهْدِ قَلْبَهُۥ ۚ وَٱللَّهُ بِكُلِّ شَىْءٍ عَلِيمٌ

No disaster strikes except by permission of Allah, and whoever believes in Allah – He will guide his heart. And Allah is Knowing of all things. (QS. At-Taghabun [64]: 11)

In the surah of At-Tawbah [9] : 51, Allah says:

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[7] Eman Supriatna, *Wabah Corona Virus Disease Covid 19 dalam Pandangan Islam*, Journal of Syar'i Social and Culture, Faculty of Law and Sharia UIN Syarif Hidayatullah Jakarta, Vol. 7 No. 6 (2020), page: 55-6-559.

قُل لَّن يُصِيبَنَآ إِلَّا مَا كَتَبَ ٱللَّهُ لَنَا هُوَ مَوْلَىٰنَاۚ وَعَلَى ٱللَّهِ فَلْيَتَوَكَّلِ ٱلْمُؤْمِنُونَ

*Say, "Never will we be struck except by what Allah has decided for us. He is our protector",
and upon Allah let the believers rely.* (QS. Al-Tawbah [9] : 51)

In the surah Al-Anfal [8]: 25, Allah says:

وَٱتَّقُوا۟ فِتْنَةً لَّا تُصِيبَنَّ ٱلَّذِينَ ظَلَمُوا۟ مِنكُمْ خَآصَّةًۖ وَٱعْلَمُوٓا۟ أَنَّ ٱللَّهَ شَدِيدُ ٱلْعِقَابِ

*And fear a trial which will not strike those who have wronged among you exclusively and know
that Allah is severe in penalty.* (QS. Al-Anfal [8]: 25)

In the surah At-Taghaabun [64]: 16, Allah says:

فَٱتَّقُوا۟ ٱللَّهَ مَا ٱسْتَطَعْتُمْ وَٱسْمَعُوا۟ وَأَطِيعُوا۟ وَأَنفِقُوا۟ خَيْرًا لِّأَنفُسِكُمْۗ وَمَن يُوقَ شُحَّ نَفْسِهِ فَأُو۟لَٰٓئِكَ هُمُ
ٱلْمُفْلِحُونَ

*So fear Allah as much as you are able and listen and obey and spend in the way of Allah, it is
better for yourselves.* (QS. At-Taghaabun [64]: 16)

In the surah Al-Baqara [2]: 185, Allah says:

يُرِيدُ ٱللَّهُ بِكُمُ ٱلْيُسْرَ وَلَا يُرِيدُ بِكُمُ ٱلْعُسْرَ

Allah intends for you ease and does not intend for you hardship … (QS. Al-Baqara [2]: 185).

2. **Hadith of Rasulullah *pbuh* (*peace be upon him*), such as:**

1. From the Prophet *pbuh*, indeed he said: "*When you hear that [a plague] is in a land, then you
   should not enter. If it occurs in a land that you are already in, then do not flee from it."* (HR.
   Al-Bukhari)
2. *Actually, Umar was in his way to Syiria then he arrived in a place called Sargh. At that time,
   Umar heard the news of a plague that had broken out in Syiria, Abdurrahman bin Auf then
   said to Umar if the Prophet Muhammad pbuh once said, " If you heard a plague on a land,
   then do not enter the land, if it is occurred in the land where you are already in, then do not
   leave the land."* (HR. Al-Bukhari).
3. Indeed, 'Umar ibn al-Khattab *ra* departed for Syiria. When he reached Sargh, the leader of the
   army, namely Abu 'Ubaidah ibn al-Jarrah, and his companions met him. They told him that a

plague had broken out in Syiria. Ibn 'Abbas said: then 'Umar said: *"Get me the early Muhajirin (who went through prayer by facing two qiblas and was migrating before qibla was moved to Masjidil-Haram—Syarah an-Nawawi)."* Then he consulted with them and informed them that a plague hit Syiria. Those people differed in their opinions. Some said: "*You have come out for a purpose and we do not think that it is proper to give it up*". Some others said: "*You have along with you, other people, especially the companions of Rasulullah pbuh; do not advise us to take them to the plague."* Then 'Umar said: *"You all may leave this place."* Then 'Umar says: *"Get me the Anshar."* Then I (Ibn 'Abbas) called them and consulted with them. It turned out that the *Anshar* had different opinions, as the *Muhajirin* did. Then 'Umar said: *"You all may leave this place"*. Then 'Umar says: *"Get me the elders of the Quraish from Muhajir al-Fath (who emigrated after the change of Qibla and before the conquest of Mecca)."* Then I (Ibn 'Abbas) called them. It turned out that there was no different opinion among them, all of them suggested: *"We advise that you should return home with the people and do not take them to the plague"*. Then, Umar made an announcement: *"Tomorrow we shall return home, so you should prepare."* Abu 'Ubaidah ibn al-Jarrah said: *"Are you going to run away from what Allah had ordained?"* 'Umar replied: *"if it was not you who said such thing, Abu 'Ubaidah. Yes, we run away from what Allah had ordained to what Allah had ordained as well. Don't you agree if you herd a camel and go down into two valleys, in which one is fertile and the other one is barren, so you would graze your camel in the fertile side only if Allah had ordained that? You would graze your camel in the barren side, only if Allah had ordained that?"* Ibn 'Abbas said: 'Abdurrahman ibn 'Auf then came and joined in, he was absent in the previous discussion since he had some other jobs. Then, 'Abdurrahman said: *"I have some knowledge about this problem. I heard* Rasulullah *pbuh said: "If you heard there is a plague in a land, do not enter it. But if the plague hit a land where you are already in, do not flee from it"*. Ibn 'Abbas said: then 'Umar praised Allah and headed back home. (HR. al-Bukhari)

4. Rasulullah *pbuh* said: "*Do not mix the sick (camel) with the healthy one"* [HR Muslim]

5. Rasulullah *pbuh* said: *"There are no contagious disease, thiyarah and owl and shafar (which is considered bringing a bad luck). You should run away from the leprosy as you run away from a lion*." (HR. al-Bukhari)

6. Rasulullah *pbuh* said: *"Tha'un plague is a verse, the very painful sign of Allah Azza Wajall's might, which is inflicted on the people of His servants. If you heard the news about Tha'un plague, then don't you be dared to enter it, if Tha'un has occurred in a land and you are there, then you should not flee from it."* (HR. Muslim)

7. Rasulullah said: *"The deeds of my followers are presented before me, good or bad deeds. I found the removal of something dangerous from the road among their good deeds. And I found the sputum mucus left uncleaned in the mosque among their bad deeds.* " (HR Muslim)

8. Abu Hurairah said: *I heard Rasulullah said: "Whatever I forbid you commit it, you should avoid it and whatever I order you, do it according to your capacity. Indeed, the destruction of people before you are because they questioned a lot and against their prophets (unwilling to submit and obey)".* (HR. al-Bukhari dan Muslim)

9. *Whoever has eaten onion and garlic, or the like should not approach mosque.* (HR. al-Bukhari)

10. *Whoever heard a call for prayer (azan) is obligatory for him to pray in congregation in the mosque, unless there are valid excuses". The companions asked: "what does it mean by valid excuses?". Rasulullah pbuh replied: "Fear or sick." (HR. Abu Daud)*

3. Fiqh Rules

1. **"***It is not allowed to harm oneself and others"*
2. *"It is more prioritized to reject destruction than to look for common benefit"*
3. *"Hardship brings easiness"*
4. *"Danger must be denied"*
5. *"Harm must be prevented as possible as it can"*
6. *"Harm must be limited according to its level".*[8]
7. *"Leader's policies (Authority) toward people must follow the common benefit".*[9]

Besides that, as has been stated by al-Imam an-Nawawi on the waiver of Friday prayer obligation:

(Third) *It is not an obligation to do Friday prayer for a sick person, even if the prayer of the villager is not valid since the number of participants does not meet the quota due to his absence.* Based on the hadith of Thariq chronicle and others, Al-bandanijy said: *"Suppose a sick person insists on performing Friday prayers then it is more important".* The *Imams* in the school of Syafi'i argued: *"Sickness that waives the obligation to perform Friday prayer is sickness that is regarded as heavy sickness if he attends Friday prayer".* Imam al-Mutawalli said: *"People who are sick of severe diarrhea are also not obliged to attend Friday prayer, in fact, if he is unable to resist his diarrhea then it is forbidden for him to attend Friday prayer since it will cause the mosque to became impure."* Imam al-Haramain said: *"Sickness that waives Friday prayer obligation is lighter in its condition than sickness*

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[8] Al-Sayūṭī, Jalal al-Din `Abd al-Rahman, *Al-Asybāh wa an-Nazā'ir*, jilid 1, c. 2, Kaherah: Dar al-Salam, 2004, page 172.

[9] *Ibid. Al-Asybāh wa an-Nazā'ir,* page 202

that waives the obligation to stand in the Fard prayer. The sickness is like an obstruction caused by muddy roads or rain, or so fort".[10]

The opinion of **Abdullah bin 'Abdurrahman al-Hadrami in the book entitled *al-Muqaddimah al-Hadramiyah fi Fiqh Assadati as-Syafi'iyyah* about the waiver of Friday and congregational prayers.**

Among the hindrances of the Friday and congregational prayers are the rain that can wet his clothes and he cannot find anything to cover him from the rain, very severe illness, taking care of the sick who have no one to take care for him, or looking after relative (wife, parents in law, slave, friend, chaplain, or master who freed him) that it is about to die or in despair, worrying his life or wealth, accompanying creditor and expecting his understanding about his poverty, withholding ritual impurity while there are still enough time, having no descent clothing, extreme sleepiness, strong wind, hunger, thirst, cold, muddy road, hot weather, traveling to close friends, eating rotten food that its smell cannot be eliminated, the collapse of market's roofs, and the earthquake.[11]

As for the legal provisions through MUI Fatwa are:[12]

1. Everyone must conduct an effort to maintain health and stay away from everything that can cause them to be exposed to a disease, since it is one of the parts to maintain the main purpose of religion (*al-Dharuriyat al-Khams*).

2. People, who have been exposed to coronavirus, are required to maintain and isolate themselves so that there is no virus contagion to others. For them, Friday prayer can be replaced with *Zuhr* prayer, since Friday prayer is an obligatory prayer involving many people, so that there is a chance of mass contagion of the virus. For them, it is forbidden to carry out *sunnah* activities which create opportunity of contagion, such performing congregational five obligatory prayers, the *Tarawih* and the *Eid* prayer in the mosque or other public places, as well as attending public recitation and *Tabligh Akbar*.

3. Healthy people and those who are not known to be exposed or believed to have not been exposed to COVID-19 must pay attention to the following matters:

   a. Under the condition they are in an area with high or very high potential of contagion based on the provisions of the authorities, they are permissible not to attend Friday prayer and

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[10] Imam an-Nawawi, *al-Majmu' Syarh al-Muhazzab,* juz IV, Publisher: Beirut, Darul Fikr, Beirut, 2005, page. 352.

[11] **Abdullah bin 'Abdurrahman al-Hadrami,** in the book *al-Muqaddimah al-Hadramiyah fi Fiqh Assadati as-Syafi'iyyah,* Publisher: **Darul Minhaj, Saudi, III edition of 2011, page 91**

[12] Fatwa Number 14 of 2020 On Organizing Worship in the Event of COVID-19 Epidemic.

replace it with *Zuhr* prayer in their residence, as well not to perform congregational five obligatory prayers, *Tarawih*, and *Eid* prayer in the mosques or other public places.

    b. under the condition that they are in an area with low potential of contagion based on the provisions of the authorities, they are still required to perform their prayer obligation as usual and are required to protect themselves from being exposed to COVID-19, such as not having direct physical contact (shaking hands, hugging, kissing hands), bringing their own prayer mat, and washing hands as frequently as possible with soap.

4. In a condition where the spread of COVID-19 is uncontrolled in a life-threatening area, Muslims are not allowed to hold Friday prayers in that area until the condition returns to normal and are obliged to replace Friday prayers with *Zuhr* prayers in their own residences. Likewise, it is not permissible to hold prayer activities that involve many people that is believed will become the contagion medium of COVID-19, such as congregational five obligatory prayers, *Tarawih*, and *Eid* prayer in the mosques or other public places, as well as attending public recitation and *Majlis Ta'lim*.

5. In a condition where the spread of COVID-19 is under control, Muslim are obliged to perform Friday prayer and are allowed to hold prayer activities that involve many people, such as congregational five obligatory prayers, *Tarawih*, *Eid* prayer in the mosques or other public places, as well as attending public recitation and *Majlis Ta'lim* by keeping themselves from being exposed to COVID-19.

6. The government takes this Fatwa as a guideline in establishing COVID-19 countermeasures policies related to the religious activities and Muslims are obliged to obey.

7. The management of the bodies of deceased people (*tajhiz al-janaiz*) who are exposed to COVID-19, especially in bathing and shrouding, must be done in accordance with medical protocols and is performed by authorized parties, while still implementing Sharia laws. Meanwhile, praying and burial is done as usual while maintaining to not being exposed to COVID-19.

8. Actions that cause panic and/or cause public harm, such as buying up and/or hoarding primary foods and face masks as well spreading hoax information related to COVID-19 are forbidden.

9. It is suggested for Muslim to get closer to Allah SWT by conducting prayer, atonement, *Istighfar*, *dhikr*, and recite *Qunut Nazilah* in every *Fard* prayer, increasing prayer upon the Prophet, almsgiving, and praying to Allah SWT in order to be given protection and salvation from disaster and distress (*daf'u al-bala'*), particularly from COVID-19 plague.

B.1. URGENCY OF RELIGION PRESENCE IN HANDLING PANDEMIC

    Religion and pandemic in plain view do not seem to be very close related. Religion in one side is so much sacred and related to spirituality matters, while pandemic is a disease related to physical life.

However, in social life, both are very likely to be connected as two things that are related to each other. Pandemic, in its handling process, requires many aspects to provide opportunities for treatment apart from medical solutions. The government which in this case serves as the main party in handling the COVID-19 pandemic, certainly cannot rely on a mere structural-instructional command only, but it also needs to expand the cooperation with religious structure. Religious leader and organization have high potential to give influences on health education and ask the society to get through the COVID-19 pandemic efficiently and effectively.

Awareness on the urgency of religion presence in handling COVID-19 pandemic has become global awareness, especially on the non-medical issues. For instance, counter narrative issues on COVID-19, that is always connected to global political discourse, has resulted political narrative which indirectly leads public opinion to reject the implementation of health protocol in order to break the chain of COVID-19 transmission in the midst of society. In this case, the government is not capable enough to stand on its own, the presence of religious figures with their charms and influences on society is deemed effective enough to help dispel some negative narratives about COVID-19 in society, so that the countermeasures will run smoothly. Hence, the cooperation between the government and religious leaders must be integral, moving in the same perspective[13].

On the other hand, religious urgency that is represented by religious leaders in handling the pandemic is not only a matter of counter narrative, but also some other important things that can be done by those religious leaders. First, religious leaders can provide input to government regarding several policies that the government might take in handling COVID-19. Second, religion and religious leaders have great potential in making major changes related to environmental adaptation that can support pandemic resolution. Third, religion and religious leaders are also capable of encouraging the community to raise donation and providing facilities by means of mutual cooperation through messages that can be delivered via religious platforms[14], which is also based on scientific attitude.

Referring to Masdar Hilmy, the intended scientific Attitude in understanding and responding to the COVID-19 pandemic is manifested in the inductive common sense as a mechanism in comprehending social reality. The role of religious figures as in religious platforms should not derive the holy texts to justify the reality of COVID-19 pandemic nor can it be carried out carelessly. Apparently, basing on religious reasoning in understanding the pandemic will only aggravate the situation since it is against the health logic.

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[13] *COVID-19: Guide for Governments Working With Relegious Leaders to Support Public-Health Measures,* (Tony Blair Institute For Global Change: 2020).

[14] *Ibid*

Therefore, it would be wiser and more beneficial if we let the experts to handle COVID-19 problems. There should not be unnecessary insistence (read: foolishness) anymore. Our lives are far more valuable than winning public debates regarding the handling of COVID-19.[15]

B.2. VITAL ASPECT IN FACING NEW NORMAL ERA

Pandemic is global public health problems, but it clearly has many dimensions, as well as different local characteristics, and affects many sectors of life: economy, politic, culture, including religious life.[16] In the situation that has not completely normal, the COVID-19 virus has profound impacts to our world, however, our responses can show how far we have reached a civilization. The entire universe follows the same scientific provision, and the more (and more fundamental) we learn about it, the more prepared we are to face the challenges that come our way.

The investment we make today will lead us to tomorrow's knowledge, and in return, future tools and techniques will bring us to the better world for all mankind.[17] If humans can befriend themselves in undergoing the new normal, in which they must implement a healthy life through standard protocols from the government, it is not impossible that they can avoid the health protection.

Nevertheless, in line with **Nashih Nashrullah,** if human self is no longer healthy and even lifeless, in the view of *Imam* Ar-Razi, then how all the laws of Allah can be applied to that person. We are not talking about destiny but talking about how religion teaches us to maintain the valuable gift from the Creator, which is the life itself. If we fail to understand this simple thing, it seems that there is something wrong in our religious life.[18]

F.   CONCLUSION

The portrait of a pandemic has long been informed through the stories of the past that have claimed human life. Al-Quran, Hadith, and also *Ijtihad* of the ulemas have firmly addressed several ways in handling the problems in the society's life. Our personal safety to avoid harm is already contained in the objectives of Sharia (*maqashid syariah*).

We should be able to overcome this dilemma with full of optimism in facing the new normal era. The corona outbreak, which started from Wuhan, China and has claimed lives in many countries:

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[15] Masdar Hilmy, *Sikap Ilmiah Menghadapi Pandemi COVID-19,* Kompas, Saturday, 04 April 2020.

[16] Suhadi dkk*, Laporan Kehidupan Beragama di Indonesia; Pembatasan Hak Beragama di Masa Wabah Covid 19,* Yogyakarta: Publisher Program Studi Agama dan Lintas Budaya (*Center for Religious and Cross-cultural Studies*, CRCS) Postgraduate Inter-Studies School, Universitas Gadjah Mada, 2020, page iii

[17] Yuval Noah Harari dkk, *Wabah, Sains, dan Politik,* (Yogyakarta: Penerbit Antinomi Institute, 2020), page 8.

[18] Nashih Nashrullah, *Corona dan Cara Beragama Kita*, Republika Daily, 2020.

Asian, European, and Middle East and other nations, serves as a stimulus for us so that we always strengthen our religion and awareness of health protocol in the midst of a pandemic for every citizen in the world.

We hope that with tactical steps from the government, religious figures, mass organizations, and COVID-19 Task Force, we will be more serious in facing new normal, so we can live normally as it is used to be.

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COVID-19: Reflections on Thoughts from the Historical and Statistic Side

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ABSTRACT

2020 is a year full of trials for people around the world. The COVID-19 pandemic has drastically changed various human activities, from thought patterns to behavior patterns. No one ever imagined that the changes were too fast and sporadic, not only from the economic perspective, but also in all aspects such as educational, social, and even cultural aspects. In Indonesia, not many people paid attention to this pandemic's emergence, they even almost being apathetic in respect to this pandemic. Starting from March to November 2020, the sufferers have increased, not only patients who have exposed to COVID-19, but also those who have died because of this virus. If we trace the history back, there was a tha'un plague that struck as well as provided wisdom for us today. Various statistical models can be implemented to anticipate this pandemic, such as time series analysis, spatial analysis, clustering, and other methods. However, these models will not be optimal if the public remains being apathetic about this pandemic and not paying attention to the health protocols. The government has recommended rules which are known as 3M or *mencuci tangan* (washing hands), *menjaga jarak* (maintaining distance) and *memakai masker* (wearing masks). The hope is that this advisory can balance the economic needs and the health stability.
Keywords: pandemics, statistical models, health protocols.

Preliminary

Every day, we always start the day by doing our daily activities with various activities; some start their day with gratitude, some start by summarizing what they want to do that day, or some start their day by immediately holding their cellphones and seeing news from friends or seeing other news. The habit, slowly but surely, unconsciously begins to form a personality in us, making us to appreciate the time more or, quite the opposite, supposing that the time will run normally like usual. There are many people holding the principle of living a life like water, let life flow as it is, and we just need to enjoy it. Some hold a principle that life must be fought for because the success in our life is determined by ourselves.

Let us be grateful for what we can enjoy. Even if we count the favors given by Him one by one, we will not be able to count them, in line with His word in Surah Ibrahim [34]

وَإِنْ تَعُدُّوا نِعْمَةَ اللَّهِ لَا تُحْصُوهَا إِنَّ الْإِنْسَانَ لَظَلُومٌ كَفَّارٌ

"And He has granted you all that you asked Him for. If you tried to count Allah's blessings, you would never be able to number them. Indeed, humankind is truly unfair, ˹totally˺ ungrateful."

The examples are the favors of good health and the favors of time since these two favors are often taken for granted. In line with HR. Bukhari no: 6412, from Ibn `Abbas:

نِعْمَتَانِ مَغْبُونٌ فِيهِمَا كَثِيرٌ مِنَ النَّاسِ ، الصِّحَّةُ وَالْفَرَاغُ

"There are two pleasures that many humans fall for, namely healthy favors and leisure time"

The first favor is the healthy one. The existence of healthy favors makes humans able to carry out various activities comfortably from waking up to before going to sleep, even during the sleep itself. As an illustration, because of the healthy favors, a father can work optimally in order to earn a living. A mother can take care of her children and her family household. A child can study diligently without any obstacles. If those healthy favors were taken away from us, we would be having difficulties to carry out our activities. As an illustration, if Allah take the health favors away from our teeth (a tiny healthy favors are taken away), then we will wake up in the morning feeling discouraged, too reluctant to eat, too difficult to communicate, not or less optimal to communicate, too dizzy to sleep or can't even sleep. Therefore, let us not take for granted the healthy favors that Allah has given us.

The second favor is the pleasure of leisure time. Time is like an arrow leaving its bow. It cannot be pulled back even for a second. Time is like a speech that has come out of a person. It cannot be taken back even for a single letter. Even the Messenger of Allah (*May the blessing of Allah and peace be upon him*) - once advised someone about time:

<div dir="rtl">

اِغْتَنِمْ خَمْسًا قَبْلَ خَمْسٍ : شَبَابَكَ قَبْلَ هَرَمِكَ وَ صِحَّتَكَ قَبْلَ سَقَمِكَ وَ غِنَاكَ قَبْلَ فَقْرِكَ وَ فَرَاغَكَ قَبْلَ شَغْلِكَ وَ حَيَاتَكَ قَبْلَ مَوْتِكَ

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"Take advantage of five things before five things: (1) Your youth before your old age. (2) your health before your sickness. (3) your wealth before your poverty. (4) your free time before you are preoccupied. (5) your life before your death. " (HR. An-Nasa'i in As-Sunan Al-Kubra no. 11832.)

It is quite common for us to waste the time just for useless activities as in spending the night just for having a futile "talk". As the result, we sleep late at night and wake up late at dawn. Taking so much time just to look at our cellphones, even only for social media, is, in fact, not very useful. Frequently, we scroll up and down our cellphones just to see other people's status, or we just look at our cell phones and then turn it off again only for spending our time; even though there are many other mandates to do. Moreover, we oftentimes watch shows that are of no use for too long; in this respect, we even spend the time in vain. In fact, Rasulullah hates vanity, as said in the following hadith.

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أَنَّ رَسُولَ اللَّهِ – صلى الله عليه وسلم – كَانَ يَكْرَهُ النَّوْمَ قَبْلَ الْعِشَاءِ وَالْحَدِيثَ بَعْدَهَا

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"Rasulullah sallallaahu 'alaihi wa sallam hates sleeping before Isha prayer and chatting afterwards. " (HR. Bukhari no. 568)"

As a reminder, don't forget that on the Day of Judgment, Allah Ta'ala will question us about all the favors He has given us. Allah Ta'ala says,

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ثُمَّ لَتُسْأَلُنَّ يَوْمَئِذٍ عَنِ النَّعِيمِ

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"Then, on that Day, you will definitely be questioned about ˹your worldly˺ pleasures (QS. At-Takaatsur [102]: 8)"

Discussion

It is better if we contemplate all kind of good or bad events that had passed through the history of Muslim civilization since we need to pay our attention to it, as happened in the era of Rasulullah SAW, including the outbreak of skin diseases such as scabies, leprosy, chickenpox as narrated in the hadith.

"*It was from Anas Ibn Malik that the Prophet SAW prayed with: O Allah, I actually seek refuge in You from disease, insanity, leprosy, and from other bad diseases.*" (Narrated by Abu Dawud)

During the era of Rasulullah, there was a very deadly plague that appeared in the history of Muslim. It was *tha'un*, a plague which at that time had claimed many lives. This year's outbreak was already discovered during the time of Prophet Muhammad SAW, to be precise, during the Children of Israel's era. *Tha'un* disease occurred in several periods, including in the month of Ramadan.

The book al-Isya'ah li Asyrot al-Sarah written by al-'Allamah al-Muhaqqiq Muhammad bin Rasul al-Husaini (1040 H- 1103 H) state that there are five most dangerous *Tha'un* in Islam. First, *Tho'un Syirawaih*, this pandemic happened during the time of Prophet Muhammad ﷺ. Second, *Tho'un 'Amway*, it happened during the reign of Umar bin Khattab. Third, *Tho'un al-Jarif*, it happened during the reign of Ibn Zubair. The fourth, *Tho'un Fatayat*, it occurred in 87 A.H. Fifth, *Tho'un al-Ashraf*. *Tho'un* is a type of plague that infected many people at the time of the Prophet Muhammad. Some scholars say that *tho'un* is also known as *jarif*; it means a type of plague that attacks and kills many people in an area. According to some medical practitioner, *tho'un* causes thirst and extreme pain until the body turns black, green, or gray as well as causes the forming of pus in several parts of the body.

This year's plague has been described in Sahih Bukhari and Muslim, "Rasulullah once said: *The plague of tho'un is dirt sent by Allah SWT to some of the Children of Israel and to people before you. If you hear about Tha'un in a country, do not enter that country. However, if the plague spreads in your country, do not leave your country in order to avoid it.* "

Based on the authentic (*sahih*) hadith above, the Prophet Muhammad SAW forbids his people to come to the place at which a plague has broken out as a form of self-prevention. However, if the plague hit the place they are staying in, they are not allowed to leave their place and should increase their surrender to Allah SWT as well as their reliance in Allah SWT. Thousands have died because of *tha'un*; however, their death is considered as martyrdom

From Hafshah bint Sirin, she told, *Anas bin Malik said*, "*Rasulullah said: A person who dies because of the plague is a martyr.*" (Narrated by Bukhari and Muslim). Not only once the plague had happened in this world. People in the past had gone through similar conditions and they tried to get out of the plague, including the plague that occurred during the Prophet's era, which, at that time, was quite unsettling. Basically, a virus is also the creature of Allah which must have been created because it has purposes. Didn't Allah SWT create everything in this world with a purpose?

الَّذِيْنَ يَذْكُرُوْنَ اللهَ قِيَامًا وَّقُعُوْدًا وَّعَلٰى جُنُوْبِهِمْ وَيَتَفَكَّرُوْنَ فِيْ خَلْقِ السَّمٰوٰتِ وَالْاَرْضِۚ رَبَّنَا مَا خَلَقْتَ هٰذَا بَاطِلًا ۚ سُبْحٰنَكَ فَقِنَا عَذَابَ النَّارِ

"*(That is) those who remember Allah standing, sitting or lying down, and they think about the creation of the heavens and the earth (saying)," O our Lord, you did not create all of this in vain; Glory be to You, protect it. us from hell's doom.*"

We are currently facing a condition that we were never thought of, that is a pandemic that has struck not only Indonesia but also countries all over the world. This is due to the coronavirus (COVID-19)

outbreak that has hit Indonesia since February 2020. COVID-19 is a disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus. This virus can cause respiratory system disorders, ranging from mild symptoms such as flu to lung infections such as pneumonia (Handayani et al., 2020).

If we look at the positive sides, there must be many lessons that we can take from the spread of COVID-19 virus. Among them are the earth is resting and all the natural ecosystems as well as the environment have begun to calm down. There is no more rumbling sound on the roads due to the decreasing of human activities; this cannot be separated from the government's policy on work from home. The river flow is clear yet again due to the reduction in air pollution and waste because the factories stop to operate. As good Muslims, of course, our attitude towards this pandemic is not to condemn, curse, or blame various parties. They are not laudable attitudes. As long as we can breathe, inhaling fresh air in the morning can move all of our organs, so be grateful. Isn't this plague taught us to live in a much healthier and holier life, such as washing hands every day, mantaining distance from other people, and avoiding activities that do not reap any benefits such as gathering for a temporary fun or even going on the razzle.

However, many has been tested economically because of this pandemic; because of this outbreak's emergence, dozens of companies were forced to terminate their work relations with dozens and even hundreds of employees. Thousands of family heads currently must work harder to support their children and wives; the parents should be more patient in facing this pandemic since they have to keep supporting their families no matter how while, at the same time, they have uncertain income; in addition, they must respond the demands from their children who need to be accompanied during their study at home. This pandemic has really taught us to be patient and grateful. Be patient that this plague will pass. Indeed, Allah is All-Seeing and The Ever Affectionate.

Allah will not burden His servants beyond their capacities. Be grateful that in this pandemic, we can still survive in this world; there is still time to improve our acts of worship. Hasn't this pandemic already claimed thousands of lives? Make whatever God gives you today as an experience containing many life lessons. Quoting Shaykh Ibn Athaliah, a person may acquire inner experience in his suffering when he cannot get it in his fast and prayer. Inner experience we get when we are tested is Allah's way of drawing His servants closer to Him. Not only when doing the acts of worship but also when experiencing losses and calamities. "*The various tests are essentially a stretch of gifts. The arrival of the trials requires not only patience but also gratitude. Because behind that gratitude, there is a gift that Allah wants to give*," still quoting the of Shaykh Ibn Athaliah.

If we trace back to the beginning of this outbreak's emergence, we assumed that this pandemic only occurred abroad, to be precise, in the city of Wuhan, China. Many people even underestimated the existence of this virus. After that, at the beginning of March 2020, the number of patients who are tested positive from COVID-19 virus is slowly growing; starting from 2 people in early March and then

increasing rapidly so that it reaches 4000-5000 people per day. Even from the obtained data, the total number of COVID-19 confirmed patients until November was approximately 400.000 cases. The following is the data on the confirmed patients, death, and recovered COVID-19 patients in Indonesia from March to November 2020 (Ardiyansyah, 2020).

Data of COVID-19 in Indonesia
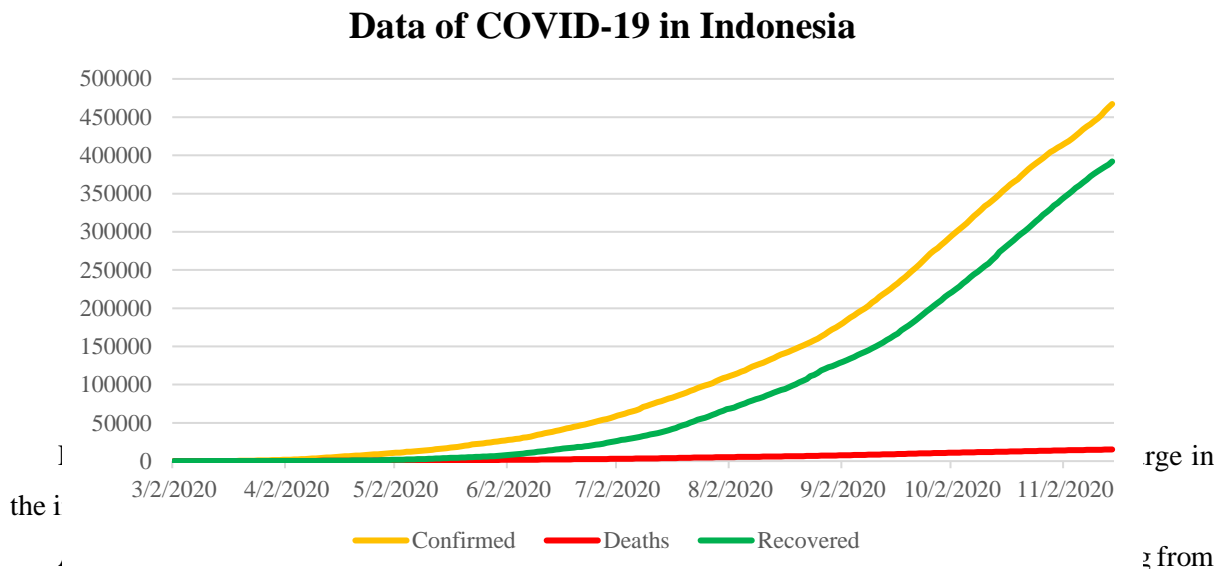
large in the i... from only tens a month, it has now become hundreds death a month. It is not about the numbers, but how much sadness the families might feel. No one expect it, when suddenly the loved one left them. Even sadder, the families are unable to deliver the deceased to the cemetery due to the implementation of health protocols. This is done by the government to prevent bad things, such as virus transmission to the deceased's families. It is in line with the principles of *maslahah mursalah* (Darmawan, 2020).

دَرْءُ الْمَفَاسِدِ أَوْلَى مِنْ جَلْبِ الْمَصَالِحِ

"Eliminating that badness takes precedence overtaking a good"

By the rules above, many activities are carried out without us predicting what will occur. Likewise, we never expected that we would not be allowed to shake hands, even though it is a culture that has been embedded in our society. We never expected to observe safe distancing when performing congregational prayers, while normally, we are required to straighten the congregational rows so that there is no gap between the congregants. We never expected that Friday prayers were suspended for several weeks since Friday prayers are an obligation for a Muslim. We never expected that we would always wear a mask every day and even in every place because usually we wear a mask only when driving. We never expected the learning system to change drastically and be replaced with online learning because, normally, in the learning process, we conduct a face-to-face learning. We never expected that we would always conduct online meetings because the meetings were usually held in a closed room. In fact, there are still many habits that change drastically that we never imagined before.

Figure 1 represents the number of cases in Indonesia that rising day by day. One of the causes is the habits that make the virus spread easily and quickly. The government has given regulation or advisories. One of which, which is intensively campaigned, is 3M regulation (washing hands,

maintaining distance, and wearing masks). However, rules are mere rules without being accompanied by the awareness of every individual. Not a few citizens that are still being apathetic about the law since uniforming perception to all individuals is not easy; it is not as easy as falling off a log because there are many different understandings that come from each person. Apart from the fact about the tiny size of the virus, many still ignore the government's advisory. One of the things that have accelerated the virus's spread is the immense frequency of population mobility in addition to the frequently occurred crowd. As a simple example, everyday citizens shop for basic needs (either in traditional or modern markets) so that forming a crowd of people from various regions at one time. Some come from far away, some come from the surrounding area. Consequently, it can intensify the chance of each individual to interact.

If we associate it with statistics and geography, there is a quite famous law, namely the first law of geography, which states that everything is always related to everything else, near things are more related than distant things (Tobler, 1970). Meanwhile in statistics, it is known as spatial statistics. Spatial statistics are analytical techniques to measure the distribution of an event spatially (Scott & Warmerdam, 2006). In spatial statistics, there is spatial data that is defined as data that contains attribute information and geographic location information with a particular coordinate system as the basis of reference (Djuraidah, 2020). Area data is spatial data that is aggregated (collected) according to its area. Area data modeling needs to consider spatial effects, namely spatial dependence and spatial diversity. Spatial dependence is associated with the idea of relative space (location); that is, neighboring areas are expected to be more similar than areas that are further away (Lesage, 1999). Dependency modeling can employ the following model (Fitriani & Efendi, 2019): (1) general spatial model/ GSM, (2) spatial autoregressive model/ SAR, (3) spatial error model/ SEM, (4) spatial Durbin model/ SDEM, (5) spatial Durbin error model/ SDEM.

Spatial diversity is the structural instability (non-stationarity) of the relationship between predictors and response variables in space (location). There are 2 kinds of spatial diversity: (1). Structural instability, (2) Heteroscedasticity.

Structural instability concerns with unstable structural parameters (regression coefficients) in all locations so that the relationship varies for each spatial unit. Heteroscedasticity concerns with different error types of spatial units. Besides, spatial diversity can be related to the spatial structure or spatial processes that produce data, that is the units in area data generally differ in size and characteristics or in the data augmentation process. Spatial diversity modeling uses the spatial expansion method: (1) Geographically weighted regression / GWR, (2) Spatial regimes, (3) Random coefficient models, (4) Models with heteroscedastic errors. In the spatial analysis, especially spatial dependencies, the taxonomy term is known as the spatial dependency model presented in Figure 2.
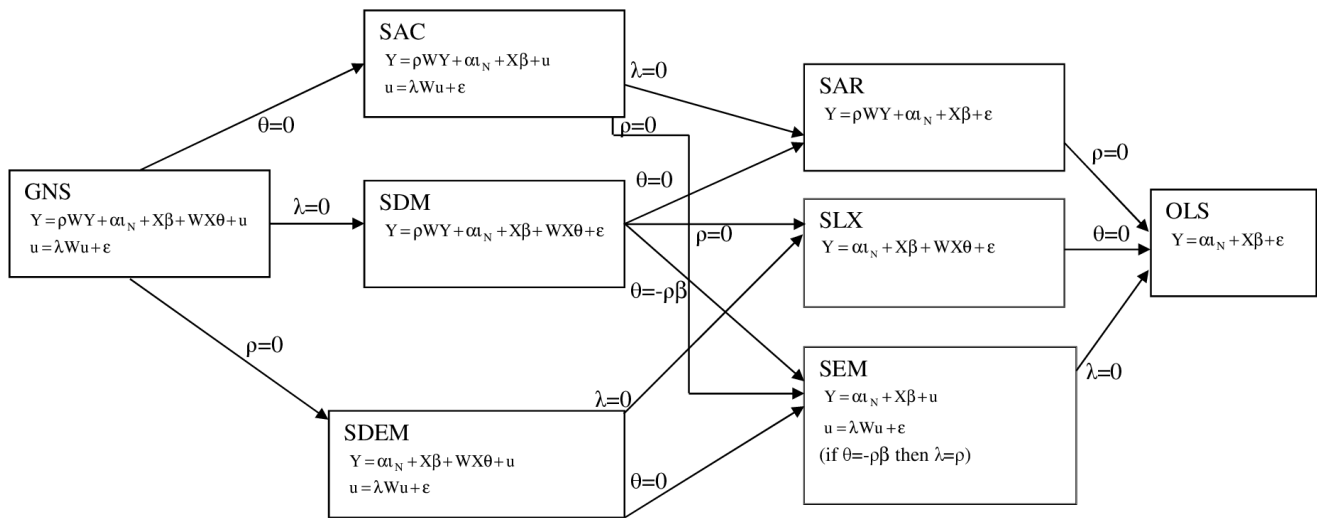
Figure 2. Taxonomy of spatial dependency models (Elhorst, 2014)

Based on figure 2, statistically, we can model or predict how big the cases of COVID-19 will be in an area. However, the main problem is the high level of individual mobility, which results in the complexity of the model used.

In addition to spatial analysis, time series analysis can also predict the number of COVID-19 patients and recovered patients. Various methods can be used, such as the Single Moving Average, Double Moving Average, Exponential Smoothing, Autoregressive Integrated Moving Average (ARIMA) model, Seasonal Autoregressive Integrated Moving Average (SARIMA), Autoregressive Conditionally Heteroskedasticity (ARCH), and Generalized Conditionally Heteroskedasticity (GARCH) (Cryer & Chan, 2008). Clustering can be carried out to determine the category level of each region using hierarchical and nonhierarchical clustering methods. To facilitate the interpretation, both online and offline visualization can be used. In online visualization, we can use website geographic information system (WebGIS) visualization; while in offline visualization, we can use the programming language R, QGIS, Tableau, or others to interpret the results that have been obtained. If the predictive analysis is going to be carried out, we can use regression analysis, such as simple linear regression, multivariable linear regression, non-linear regression, dummy regression, logistic regression, survival regression, etc.

Nevertheless, all forms of predictions, interpretations, and useful visualizations cannot be optimal or limited to be mere information if they are not accompanied by the population's awareness to obey the existing rules. Prediction or clustering will not be useful if there is no change in society because, basically, the data analysis serves as additional needed information, but if people's behavior patterns do not change, the virus's spread will remain high. Therefore, the awareness from all parties is needed in

order to overcome this pandemic. The government suppresses the outbreak by providing clear health protocols and regulations. At the same time, the public should discipline in implementing these rules.

Closing

The COVID-19 pandemic has drastically changed various human activities from thought patterns to behavior patterns. At the beginning of the epidemic's emergence, not many people paid attention to almost being apathetic about this pandemic. From March to November 2020, sufferers have increased, not only patients with COVID-19 but also patients who have died because of this virus. If we trace the history back, there was actually *tha'un* that hit as well as provided wisdom for us today. Various statistical models can be applied to anticipate this pandemic, such as time series analysis, spatial analysis, clustering, and other methods. However, these models will not be optimal if the public remains apathetic about this pandemic and do not pay attention to the health protocols.

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Reflections on The Mature Attitudes During the COVID-19 Pandemic from An Islamic Perspective

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ABSTRACT

Coronavirus is a test for the people and government of Indonesia. The attitude of the Indonesian government is under the spotlight because it is considered too arrogant since they state that the coronavirus will not enter Indonesia. Whereas in Islam, Allah clearly forbids humans to have this disease of heart. In addition, the confusion of news about this virus makes it easy for people to be consumed by hoax news. Islam itself already has guidelines on how Muslim should behave towards this matter. Steps that can be taken by a Muslim is to carefully find the truth of the information or *tabayyun*.

Keywords: vanity, hoax, tabayyun

INTRODUCTION

At the end of December 2019, a 55-year-old man working as a trader at a wild animal market in the city of Wuhan, Hubei Province, China was confirmed as the first person to have contracted the Corona or COVID-19 virus. The symptoms he experienced were high fever lasting more than two weeks accompanied by respiratory problems. Due to his profession as a wild animal trader, he was suspected of contracting the COVID-19 virus from wild animals traded in the market where he was selling [1]. With the increasing number of victims, on January 23, 2020, the Chinese Government decided to close the city of Wuhan, which is the epicenter of the emergence of the coronavirus. This decision was taken after the death toll reached 17 people and approximately 600 people were infected. To anticipate Indonesian citizens being infected with this virus, the Indonesian government through the Ministry of Foreign Affairs repatriated 243 Indonesian citizens from Hubei Province [2].

The World Health Organization (WHO) said that the coronavirus has spread to 18 countries. According to WHO, the number of this spread had increased as of January 30, 2020; only 15 countries had previously reported their case of COVID-19 before another three countries reported theirs, those three countries were Finland, India, and the Philippines. Other countries that followed the confirmation were Japan (11), Singapore (10), Malaysia (7), France (5), South Korea (4), Vietnam (2), Cambodia (1), Thailand (14), Nepal (1), Sri Lanka (1), United States (5), Canada (3), Germany (4), and the United Arab Emirates (4). Nearly two months after the coronavirus had broken out, on January 30, 2020, the World Health Organization (WHO) declared a global emergency against the coronavirus. WHO Director-General Tedros Adhanom Ghebreyesus states that the emergency situation is caused by the spread of the virus in China, but because it has widely spread to many countries [3].

CONTROVERSIAL STATEMENTS AND ISLAMIC LAW ABOUT IT

However, it is very unfortunate that while other countries were struggling to combat the COVID-19 virus, several Indonesian public officials made very controversial statements. Kompas.com summarizes some controversial statements made by Indonesian officials who initially denied the existence of coronavirus and underestimated its contagious power which is now destroying Indonesia's health and economy [4].

1. Indonesian Minister of Health Terawan Agus Putranto said that instead of constantly questioning, Indonesian should be grateful since in Indonesia coronavirus had not been detected yet.

2. Indonesian Minister of Health Terawan Agus Putranto on February 17, 2020, stated that it is all because of prayer that the coronavirus has not entered Indonesia. This statement was made by Terawan when the first case had not been announced yet.

3. The government had budgeted Rp 72 billion to pay for influencer services and media promotion to boost sluggish Indonesian tourism due to the spread of the coronavirus.

4. Health Minister Terawan Agus Putranto previously admitted that he was surprised by the public's overreaction in response to the fact that two Depok residents were confirmed with positive result of COVID-19. Terawan said that the public should not have to worry because the flu that commonly infected Indonesian citizens had a higher mortality rate than the coronavirus.

5. Health Minister Terawan Agus Putranto also stated a theory about the coronavirus. According to him, COVID-19 was a disease that will resolve on its own.

6. President Joko Widodo has also made confusing statements when the government tried to prevent the transmission of COVID-19 to other regions. This was conveyed by Jokowi in response to the question of why the government had not ban the homecoming travel since the establishment of COVID-19 emergency response so that the chain of transmission to other regions could be cut off earlier.

7. President Joko Widodo's statement to make peace with COVID-19 receives various responses, including negative responses, since the narrative conveyed by the government is to fight against COVID-19. Because of that statement, some people assumed that the government had lost their hope in dealing with the transmission of COVID-19. In his statement, during the outbreak persists, Jokowi asks all people to remain disciplined in adhering to health protocols.

The Coronavirus was detected to have entered Indonesia when there were Depok residents suffering from coughs and shortness of breath. After tracing was conducted, it turned out that the patients had physical contact with a Japanese citizen who had contracted the coronavirus in Malaysia. From this first

case, the number of confirmed cases and deaths increased. As of November 25, 2020, the number of confirmed cases reached 511.836, 16.225 deaths, and 429,807 recovered cases [5].

If we take a flashback to the situation before this pandemic entered Indonesia, the Indonesian government seems too *takabbur* or arrogant, believing that this virus would not enter Indonesia. This can be seen from several controversial statements made by public officials. It is very dangerous when someone has an arrogant nature as has been explained in Islam. Arrogance can also lead us to hell and earn ourselves the wrath of Allah SWT. Therefore, we must be careful in managing and arranging our hearts so that they are always protected from arrogance.

As Allah says in the Qur'an surah Al-Israa verse 37, it is clearly stated that people are not allowed to walk on the earth with their arrogance. In other words, Allah clearly forbids them to have this heart disease; if they do not heed it, Allah's wrath is the reward [6]. In a hadith, Rasulullah SAW said:
 "*People will not enter heaven whose heart is arrogant, even if only as heavy as a mustard seed.*" (HR. Muslim).

Islam is a religion that teaches noble morals. Therefore, there are many propositions in Qur'an and Sunnah that instruct us to have noble morals and stay away from disgraceful morals. Likewise, many propositions show praise for those who own good character and show reproach for those who own bad character. One of the bad morals that every Muslim must avoid is an arrogant attitude [6].

Arrogant attitude is believing that one is the most righteous and better than anyone else. Arrogant people always think themselves as perfect and above others. There is Allah Ta'ala saying which means, "*And do not turn your face away from people (because of arrogance) and do not walk the earth haughtily. Surely Allah does not like arrogant and boastful people*" (Surah Luqman: 18). In addition, there are other verses that states the same things, that is Allah's dislike of haughty people.
Allah Ta'ala says, "*Surely He does not like the arrogant*" (Surah An Nahl: 23).

HOAX INFORMATION AND HOW ISLAM CAN HANDLE IT

The test that is accepted by Indonesian is not only the large number of people who are infected with the Coronavirus. The public is also puzzling over confusing information about the coronavirus. Through social media, there is a lot of unclear information which truth has not been confirmed yet, so these hoaxes often make the public to feel anxious and restless. According to the official government website www.covid19.go.id there are several hoaxes circulating in the community, they are [7] :

1. COVID-19 is not caused by a virus, but by bacteria.

   The message is doing round on WhatsApp. It claims that the Italian government, through an autopsy, found that COVID-19 was bacteria. These bacteria are responsible for blood dilution and blood clotting. With this discovery, the cure was apparently found and had been given to 1,400 patients so that they are recovered. The unknown writer of this message accuses WHO and China are conspiring together in issuing recommendations about the bodies of COVID-19

patients that must be buried immediately. Moreover, the message suggests that this measure is done in order to cover up this fact; as the result, other countries will buy ventilators which are produced by China.

In fact, The Italian Ministry of Health, through its official website, explains that COVID-19 is caused by the new coronavirus, which is a large family of viruses that cause MERS and SARS. Besides, WHO does not prohibit autopsy on the bodies of COVID-19 patients. On the contrary, WHO and CDC (Centers for Disease Control and Prevention in USA) have issued safe autopsy guidelines.

2. Gloves wore by officers during mass rapid test are capable of transmitting COVID-19.

This hoax is circulating in Semarang via WhatsApp and has disturbed the public. In the message, people are asked to be careful if they are stopped by rapid test officers on the streets to carry out mass rapid tests. The reason is that officers who draw blood does not change their gloves so that patients who have not contracted COVID-19 can be infected too.

Responding to this news, the Head of the Semarang City Health Office, Abdul Hakim, emphasizes that Semarang City's rapid or swab test officers always change their gloves every time they have different patients. Besides, every patient who is examined by the field screening team during mass tests is also required to follow the health protocols such as washing hands before and after the test so that they can be spared from coronavirus transmission.

3. Coronavirus is man-made.

This hoax news uploaded by Karim Zaidan's account on Facebook by quoting the opinion of a professor who won the 2018 Nobel Prize in Physiology in Japan, Dr. Tasuku Honjo. This hoax claims that coronavirus is made by a laboratory. The reason behind this claim is if the coronavirus is natural, the virus will only have an impact on countries that have the same temperature as its area of origin. While, in fact, coronavirus have widely spread throughout the world regardless of the climate in those countries.

Dr. Tasuku Honjo has refuted the truth of that misleading information. He has indeed stated that coronavirus most likely originated from China, but that does not mean it is made by China.

4. Vietnam have zero COVID-19 deaths because of lemon and hot tea.

Until now, Vietnam has zero COVID-19 deaths. Unfortunately, it is used by irresponsible parties to spread misleading information about the habit of drinking hot tea with lemon juice before going to bed at night is the key that makes Vietnam have zero COVID-19 deaths.

In fact, Vietnam manages to handle the pandemic well because of its government policies. Regarding the benefits of lemon and tea, Dr. dr. Inggrid Tania, M.Si has explained that they both contain antioxidants so that the combination of these two can regulate the immune system and prevent free radicals in the inflammatory process. However, there is no evidence that lemon and warm tea can cure coronavirus infection.

Reflecting on the spread of hoaxes above, we get used to see a problem only on certain parts and do not understand it as a comprehensive coverage. We tend to see a problem, digest information, and in the end, seek out certain opinions that agree with our attributes and interests. In a study published in the Journal of Economic Literature in 2017, this phenomenon is referred as information avoidance, a phenomenon that describes how people choose their reality by deliberately avoiding information that threatens their happiness and well-being.

The tendency to avoid information is certainly dangerous because it makes us unable to see a problem as a whole; on the contrary, we only see a problem only from certain parts that we like and we consider attractive as well as that match with our subjective attributes. Whereas, in Qur'an surah Al-Baqarah (2) verse 216, Allah SWT says:

"*You are obliged to fight, even though fighting is something you hate. But perhaps you hate a thing and it is good for you; and perhaps you love a thing and it is bad for you. And Allah Knows, while you know not.*"

This verse is a warning to us, that we must be careful in liking or hating something. Apart from that, in that verse, we are also reminded that we have insufficient knowledge because there are many things that we do not know. Therefore, we need to continue learning, looking for information with an open mind so that we can accept the truth without having to choose what we like and do not reject the truth that is delivered to us. In the hadith narrated from Abdullah bin Mas'ud Radhiyallahu 'anhu, the Prophet sallallaahu' Alaihi wa Sallam said:

"*No one who has the weight of a seed of pride in his heart shall not enter Paradise.*" There was someone who asked, "What about a person who likes to wear nice clothes and sandals?" He replied, "Verily Allah is beautiful and loves beauty. Being proud is rejecting the truth and belittling others" (HR. Muslim no. 91).

In the hadith above, it is explained that the form of arrogance towards the truth (*al Haq*) is refuting it. Anyone who rejects the truth is arrogant because of the rejection. So, it is obligatory for us to accept the truth which is in accordance with the Al-Qur'an and Al-Hadith. Regarding this matter, Qur'an explains it in surah Az-Zumar (39) verse 59, where Allah SWT says:

"*(Isn't that so) My revelations had already come to you, but you rejected them, acted arrogantly, and were one of the disbelievers.*"

We realize that the inability to get a complete picture of information will impact the good or bad of the decisions that will be taken. Therefore, as a Muslim, we should seek clarity or perform *tabayyun*. The term *tabayyun* is rooted in the Arabic word: *tabayyana - yatabayyanu - tabayyunan*, which means to seek clarity, essence or the truth of a fact or information carefully and thoroughly [8].

The spread of hoaxes makes people see a phenomenon or problem from one side only for the purpose of stirring opinions, pleasing the information avoider, spreading slander, or seeking popularity. So, this is what makes the information sometimes is not presented in accordance with the "validity"

value, but upon the number of likes and how "hot" the information is. Therefore, it is our duty, as Muslim intellectuals, to practice *tabayyun* so that we can understand facts, information, and phenomena properly and thoroughly. Regarding *tabayyun*, Allah SWT says in Qur'an surah Al-Hujurat (49) verse 6 which reads as follow:

"*You who believe, if a wicked person comes to you with something news, then ascertain (to determine) the truth, so you do not harm people unknowingly later regret what you have done*."

The *tabayyun* process is said to be successful if it can reveal facts with guaranteed accuracy and are based on clear analysis without the intervention of subjective attributes. Getting used to this *tabayyun* attitude will clear our mindset so that we can be more careful and thorough in receiving information or news. It is through this clarity of thought that an attitude of wisdom will be built, and an awareness of knowledge is required for taking action will be gained. In Qur'an surah Al-Isra (17) verse 36, Allah SWT says about the importance of having knowledge as a foundation of taking action:

"*And do not follow what you do not know of. Verily all the hearing, sight, and the heart, each of these shall be asked about*"

The verse is a reminder for us that every action we will take must be based on knowledge and is not because of following the trend since it can lead us to a *taqlid* attitude.

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RELIGIOUS AUTHORITY IN FACING COVID-19 PANDEMIC

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ABSTRACT

Since the announcement of the first coronvirus pandemic case in Indonesia on March 2, 2020, in which 2 people were tested positive for COVID-19, the cases continuously increase. To overcome and break the chain of coronavirus, the various health protocols must be obeyed by the society. The *fatwâs* of the ulemas of MUI, NU and Muhammadiyah provide guidance on the prevention and procedures for religious activities amid coronavirus pandemic. However, the *fatwâs* that represent religious authority does not seems to be adhered to. This phenomenon is caused by the theological understanding of Muslims. In Islam, there is a guidance for worship based on the theory of emergencies which have been exemplified by the Prophet Muhammad SAW.
Keywords: Religious Authority, *fatwâs* NU, MUI, Muhammadiyah

A. Introduction

Only 14 days after the President of Indonesia, Djoko Widodo announced Indonesian first case of COVID-19, which were 2 residents of Depok, West Java, on 2 March 2020 [1], The Indonesian Ulema Council (MUI) issued *fatwâs* Number 14 in 2020 on Monday, March 16, 2020 regarding the organization of worship in the COVID-19 outbreak situation. According to the secretary of MUI, Dr. Asrorum Niam Sholeh, MUI *fatwâs,* which are based on Islamic views, emphasize that people who have been contracted COVID-19 are prohibited from participacing in activities involving crowd, one of which is religious activities. Meanwhile, in areas that have a high transmission rate, congregational prayers, *Friday* prayers, and other religious activities are suspended. MUI advises people who have been exposed to coronavirus to treat and isolate themselves in order to prevent the virus transmission to other people; likewise, healthy people who are not infected with coronavirus but living in areas that have the potential for COVID-19 transmission should stay at home [2].

Before MUI issued f*atwâs* about COVID-19 on March 16, 2020, Nahdlatul Ulama and Muhammadiyah had already issued their *fatwâs*. Nahdlatul Ulama Excutive Board (PBNU) instructs PWNU (Nadhlatul Ulama Regional Board) and PCNU (Nahdlatul Ulama Branch Board) and the autonomy agencies under Nahdlatul Ulama to form NU care center for COVID-19. This instruction is contained in the letter of statement No. 3945/ CI34/ 03/ 2020 which was published in Jakarta on Thursday, March 12, 2020 or 17 Rajab 1441 A.H. The letter was signed by Rais Aam, PBNU KH Miftachul Akhyar, *Katib* Aam KH Yahya Cholil Staquf, Chairman KH Said Aqil Siroj, and Secretary General HA Helmy Faishal Zaini.

Muhammadiyah issued circulars related to the coronavirus which was signed by the Chairman of PP Muhammadiyah on March 20, 2020 which later was posted in Muhammadiyah

2lensamu instagram account. Muhammadiyah's appeal obligies its member to conduct worship in their own home. This appeal is established by considering the spread of COVID-19 and is implemented in accordance with the principles of emergencies amid pandemic taken from the Al-Qur'an and Hadith which were held by the Muhammadiyah tarjih council [3].

Ironically, in Banda Aceh, the citizens are still conducting worship at mosques although there have been positive cases of COVID-19 which are currently treated at Zainal Abidin Public Hospital. Furthermore, Baitur Rahman Aceh Mosque is still conducting Friday prayers. The results of BBC Indonesia's journalist investigation suggests that it is againts the COVID-19 pandemic and some of *jemaah* stated that they were not afraid of COVID-19; it should be a moment for the citizens to pray so that they were spared from COVID-19 [4].

In the midst of the massive spread of coronavirus in Indonesia, religion should be in the front line and should help the government to reduce and break the chain of COVID-19, but the *fatwâs* are actually causing anxiety and rejected by Muslims. In other words, ulemas' authority towards the implementation of Islamic laws amid COVID-19 is ignored. What has happened here led to scientific speculation whether this disobedience of the authority of the ulema' *fatwâs* is a phenomenon of the inability of the ulemas to deal with COVID-19; or whether the symbolism of sacralism and propanity of Muslims is still adhering to the implementation of *sharia* in the midst of emergencies; or *da'wah* communication, Islamic teachings that are given to Muslims stop at the theoligical experience without being informed about the relevance of Islam to the technological, social, economic and political science nuances. This essay will examine more about this theme, namely the religious authority in the midst of the COVID-19 pandemic in Indonesia.

B. THE ROLE OF ULEMAS IN FACING COVID-19

Since Indonesia's indepedence in 1945, ulemas has a very strategic role. Ulemas has contributed to the security stability and succeeded to manage the differences in various group of Muslims. The establishment of MUI, NU, and Muhammadiyah in the maturation journey of the understanding Islam in indonesia has carried out coaching effort through the ulemas' *fatwâs*. Various *fatwâs* are issued based on the needs of Muslims in accordance with social, political, economic, and state conditions; the example is *fatwâs* about *sharia* financial institutions.

MUI, NU, and Muhammadiyah *fatwâs* are processed through the methodology of *Ushul Fiqh* which is in accordance with Istinbath Law that carried out by previous ulemas in the 4th century A.H. until the 21st century's contemporary era. The mindset of ulemas as contained in the ulema's f*atwâs* through the scientific method of *Ushul Fiqh*, the principles of *fiqh*, the principles of *Ushuliyah*, and the scientifc approach with saint and technology enables *fiqh* to change even though it is directly explored through the *nash* of Al Qur'an and Al Hadith.

The products of *fatwâs* that make the current *fiqh* possible are the products of rationality based on scientific logic. Some problems in *fiqh* are the result of previous researches by *mujtahid*. This scientific logic does not rule out the possibility of a broader *fiqh* fields [5]. The discovery of *fatwâs* between NU, MUI, and Muhammadiyah still carries out the tradition of *ijtihad* with the methodology of *ushul fiqh* as the main guideline. A number of *fatwâs* have been produced by these three institutions in response to the current social changes.

From historical perspective, the *fatwâs* of ulema have religious authority in Indonesia. Various *fatwâs'* products have been decided, starting from *fatwâs* about health, economy, cosmetics, politics and science. In the context of the spread of coronavirus in Indonesia, as usual MUI, NU, and Muhammadiyah issue *fatwâs* to overcome coronavirus and *fatwâs* regarding religious activities during COVID-19 pandemic in Indonesia. Some ulemas' *fatwâs* amid COVID-19 outbreak can be summarized as follows: (1) MUI *Fatwâs* Number 1 of 2020 on prohibition of holding congretational prayers for Muslims amid the coronavirus Pandemic [6]. (2) MUI *fatwâs* Number 18 of 2020 on guidelines for the management of Muslims' deceased bodies (*Tajhiz Al-Janaiz*) infected by COVID-19 [7]. (3) MUI *fatwâs* Number 17 of 2020 on guidelines of *Kaifiat* for health workers who use Personal Protective Equipment (PPE) when taking care and treating COVID-19 patients [8]. (4) MUI *fatwâs* Number 28 of 2020 on the guidelines of *Kafiat Takbir* and *Eid Al-Fitr* prayers during COVID-19 outbreak. (5) Nahdlatul Ulama and Muhammadiyah not only issued the *fatwâs* regarding the countermeasures of coronavirus and worship activities during COVID-19 pandemic, but also formed the COVID-19 Task Force in various regions in Indonesia as well as channeling assistance and appeals on the official NU and Muhammadiyah web pages.

C. **THE DILEMMA BETWEEN RELIGIOUS AUTHORITIES AND FULFILLING** *SHARIA* **OBLIGATIONS**

Basically, *fatwâs* on COVID-19 countermeasures is not the first *fatwâs* issued by ulemas in the medical field. Previously, ulemas also issued *fatwâs* in the health sector such as Family Planning (KB), test-tube baby, kidney transplat, immunization and many more. The health *fatwâs* issued by ulemas before 2020 which either issued by Nahdlatul Ulama (NU), Muhammadiyah, and the Indonesian Ulema Council (MUI) could be accepted by Indonesian islamic community; if there were those who questioned or criticized, it was only in a small frequency. The ulemas' *fatwâs* on the management of COVID-19 and religious activities in the pandemic era arise various opinions, especially from Muslims in some regions. The refusals mainly about religious activities that are banned and replaced with conducting worship at home. The religious authority represented by the ulemas' *fatwâs* doesn't seem to have enough power

to persuade and encourage Muslim community (*umat*) to obey the religious teaching and their ulemas.

What is still in question is what is the missing point that make the *fatwâs* on COVID-19 are not obeyed by some Muslims even though there are many appeals to obey the *fatwâs* of ulemas in order to break the chain of coronavirus transmission among the Muslims community. The Vice President of the Republic of Indonesia, KH. Ma'ruf Amin, stated that ulemas had a strategic value in mobilizing Muslims to observe the prevention of COVID-19 transmission [9]. A well-known ulema through Kompas TV and several Indonesian National TV stations persuaded and urged Muslims to combat coronavirus in Indonesia by wearing mask, gloves, PPE, and by staying at home; even Aa Gym gave his *fatwâs*, it was considered *zalim* if you infected others [10]. Nahdlatul ulama PB Chief's K.H Said Aqil's appeal was aired in YouTube Channel on March 21; he advised Muslims to follow the ulemas' *fatwâs*. However, this appeal is still ignored.

Dr. KH Mukhotob, M.M., the chancellor of Wonosobo Al-Qur'an University (Unsiq) stated that there had been a theological conflict in the Islamic community in responding to the ulemas' *fatwâs* on handling COVID-19 and conducting worship during COVID-19 pandemic in Indonesia. Theological polemic was dominated by Muslims because their religious attitude often crashed with other contexts outside the religion itself, including coronavirus. The prohibition of conducting worship at mosques during the pandemic is a theological violation; whereas, Muslims need to conduct congregational prayers, Friday prayers, *Tarawih* prayers*, Eid Al Fitri* and *Eid Al Adha* prayers, *sunnah* prayers, *iktikaf* at mosques, recitation, *haj* pilgrimage, and etc. This theological complication tends to be addressed by ignoring the pandemic even in YouTube there was a video which touted "We are not afraid of coronavirus, we are just afraid of God" [11].

According to Ian Barbour's opinion on the theory of religious integrity and science, the lack of Muslims awareness in obeying the *fatwâs* of ulemas concerning the handling of COVID-19 and religious activities which are conduced at home is due to Islamic transfertation pattern that doesn't occur in the communication between religion and science. This understanding puts the position of religion in different nadir with science, therefore in certain situations they will clash. Amin Abdullah interpreted it by not greeting each other.

Minhaji, Professor of Islamic social law stated that Muslims were still trapped by sacralism and propan 12]. The response of Muslims towards coronavirus by ignoring the *fatwâs* of ulema and refusing to conduct worship at home is an attitude of sacralism and propan. It means being trapped into an absolute religious symbolic and the obligation to fulfill the demands of religion as if there is no easing as well as being regarded as sinful act. In fact, Islam has an emergency theory on conducting worship in any impossible situations.

Conducting worship or religious activities when dealing with emergencies have been experienced by the Prophet. Islam actually has an emergency concept agaaints infectious diseases, according to Dr. Drs. Asmuni Mth, M.A., lecturer in Islamic Law and Director of Islamic Boarding School of the Islamic University of Indonesia. Based on historical record, there was an outbreak during the Prophet Muhammad and his companions' era even though it was not a deadly disease like COVID-19. During the Prophet era, there was an epidemic known as leprosy. Although this leprosy is easily cured at this time, in that era it was a frightening disease because no treatment had been found. This epidemic spread quickly and infected many people. As a precautionary measure, the Prophet Muhammad ordered his followers not to be close to the sufferer. In the hadith of the Prophet narrated by HR Bukhori, which means, "*if you hear of an epidemic in an area, then do not enter the area; but if it happens in your area, the don't leave the place*". This hadith talked about regional quarantine [13].

The weakness of the ulemas' authority in the midst of COVID-19 pandemic can be seen from the result of the webinar discussion on April 20,2020 which theme was "Religious Authority Amid the Increasing Number of Coronavirus Cases". This webminar was held by Sharia Faculty of UIN Imam Bonjol Padang, West Sumatra. What the ulemas of MUI, NU, Muhammadiyah appealed to through the COVID-19 countermeasures *fatwâs* and prayer guidelines are already appropriate. It's just that there is communicarion barriers, therefore people don't understand the ulemas' *fatwâs*. The suspension of activities at mosques, recitation, and *Majlis Ta'lim* makes it difficult for ulemas, *kyai*, and chaplain (*ustadz*) to give explanation to public. On the other hand, it must be admitted that the teaching pattern of the islamic religion and the technology of *da'wah* must be repaired. Islam should become the front guard religion to invite its people to cope with COVID-19 since 80% of Indonesia's population is Muslims. Many mosques and *mushola*, islamic education institutions, islamic boarding schools and islamic colleges, the majority of which are all over Indonesia, are not directly involved in providing an appeal for the prevention of COVID-19 in Indonesia. The appeal for the prevention of COVID-19 and *syi'ar* Islam through *Majlis Ta'lim* can actually be carried out in one package; due to the closing of mosques, *mushola*, and the banning of gatherings involving crowds, a phenomenon that arises is that many *ustadz* and *kyai* as well as *mubaligh* stop the recitation. This actually can be overcome by holding virtual recitation via *Zoom*, *Google Meeting*, and other social media such as *Facebook*, *Twitter*, *Instagram* and etc. The lack of mastery in digital technology is the obstacle in the cessation of the recitation. Learning from COVID-19, there are many new things that must be learned before entering the new normal of Islamic *da'wah*, as an understanding that Muslims must adjust to the latest media and technology. If this is not done, the humanistic Islamic learning process among Muslims will be greatly hampered.

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COVID-19 as a Form of Love from Allah

By: Muhammad Hasan Sidiq Kurniawan

In the last one year or so, the world has been made anxious, confused, and frightened by the presence of Allah's "messenger" called the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) or commonly known as COVID-19. It might be an exaggeration to say that all the world's inhabitants are confused and restless; in fact, only Allah's creature named human beings who are confused. We can see that Allah's other creatures other than human beings, namely groups of animals and plants that always praise Him in their language, look so calm and serene amid the COVID-19 outbreak. We, as human beings, may be able to argue that these non-human creatures are not endowed with mind, so they tend to ignore the problems of this plague. However, isn't it impossible for us to learn from those animals and plants? Could it be that our panic is due to our lack of *dhikr*, prayer, and having a good relationship with Allah SWT so that He brings a plague to the world? Maybe all this time, only our mouths have said *lillaahi ta'ala*, but our hearts are still *li* (for) world, *li* (for) treasures, and other *li* (for). Allah has affirmed and promised that there will be no new prophet after Rasulullah Muhammad SAW. Therefore, in giving warnings to His creatures, from the group of *jinn*s and human beings, Allah sends His other "messengers". So, what lessons can we learn from this "messenger" of Allah?

As human beings, of course, we are aware that the strength of a human being is that we are endowed with mind so that we are given the ability to distinguish between what is good and what is not. Distinguishing these two things can only be done by human beings who use their mind and heart. Not only this time, but there have been other outbreaks like COVID-19 in the world. Quoted from Kompas.com, in the 1950s, there was an outbreak of Malaria in Indonesia in November. As people who believe in His stipulations, our attitude is to believe and know that all of this comes from Allah, as He says in Q.S. Al-Baqarah 26:

$$\text{۞ اِنَّ اللّٰهَ لَا يَسْتَحْيٖٓ اَنْ يَّضْرِبَ مَثَلًا مَّا بَعُوْضَةً فَمَا فَوْقَهَا ۗ فَاَمَّا الَّذِيْنَ اٰمَنُوْا فَيَعْلَمُوْنَ اَنَّهُ الْحَقُّ مِنْ رَّبِّهِمْ ۚ}$$

$$\text{وَاَمَّا الَّذِيْنَ كَفَرُوْا فَيَقُوْلُوْنَ مَاذَآ اَرَادَ اللّٰهُ بِهٰذَا مَثَلًا ۘ يُضِلُّ بِهٖ كَثِيْرًا وَّيَهْدِيْ بِهٖ كَثِيْرًا ۗ وَمَا يُضِلُّ بِهٖٓ اِلَّا}$$

$$\text{الْفٰسِقِيْنَ}$$

Indeed, Allah is not timid to present an example of a mosquito or what is even smaller. As for the believers, they know that it is the truth from their Lord. And as for those who disbelieve, they argue, "What did Allah intend by this as an example?" Through this ˹test˺, He leaves many to stray, and guides many. And He leaves none to stray except the defiantly disobedient

People who use their mind and heart will know that COVID-19 comes from Allah and it must contain enormous wisdom and benefits. Apart from the true believers, they will only see COVID-19 in terms of threats and dangers. And worse, the mass media leads us to think so. We have seen a lot of "warfare" slogans against COVID-19, such as "Fight COVID-19, obey health protocols" or "Fight COVID-19 by adhering to health protocols". There are no soothing slogans that invite people to do self-introspection, such as "Let's take lessons from COVID-19 while adhering to health protocols" or neutral slogans such as "Let's make efforts to prevent COVID-19 by wearing a mask." Human beings have become too arrogant with their civilization and knowledge, so they feel there is no need to involve Allah in everything, including in this COVID-19 affair. Have we forgotten that everything happens with Allah's approval and not solely the result of our efforts? If we are going to calculate, our efforts only contribute 50% or if it's more, it will be approximately around 70%. But the question is, who makes us endeavor? Who allows us to endeavor? Who gives us the energy and mind to make efforts? The answer is clear, it is Allah The Powerful. However, we often feel too confident in our knowledge and abilities. Allah provides further information in Q.S. Al-Baqarah [27].

$$ اَلَّذِيْنَ يَنْقُضُوْنَ عَهْدَ اللّٰهِ مِنْۢ بَعْدِ مِيْثَاقِهٖۖ وَيَقْطَعُوْنَ مَآ اَمَرَ اللّٰهُ بِهٖٓ اَنْ يُّوْصَلَ وَيُفْسِدُوْنَ فِى الْاَرْضِۗ اُولٰۤئِكَ هُمُ الْخٰسِرُوْنَ $$

This verse explains the definition of people who are ordained to go astray by Allah SWT, namely the defiantly disobedient. Let us do self-introspection whether we are among those who are defined because, essentially, all human beings had promised to worship Allah while they were still in the womb. *Insha'Allah* (if Allah wills it), with faith and a sincere heart, we will perceive the wisdom of this pandemic. The question is what good can be taken from this pandemic.

Speaking of Allah's wisdom, of course, it is impossible to write them down one by one here since Allah is The All-Encompassing. However, we can see one of the learned lessons by interpreting the Q.S. Al-Baqarah verse 26, which has been mentioned earlier. In that verse, Allah makes a parable with a tiny creature, namely a mosquito. We all know that the size of the COVID-19 virus is significantly smaller than a mosquito. So, we can take the same lesson from that verse. In this verse, Allah provides information that He misleads many, and with that, He also guides many. To have further interpretation, we can look at the events when the Prophet Musa AS preached to Pharaoh. At that time, before Allah drowned Pharaoh in the Red Sea,

warnings had come before him, such as famine, drought, floods, locusts plague, fleas plague, frogs plague, to the waters of the Nile turned red as blood. Perhaps many of us are wondering why did not Allah immediately destroy Pharaoh and his followers? Why was Pharaoh given gradual warnings? According to Q.S. Al-Baqarah verse 26, actually Allah allowed Pharaoh and some of his followers to return to the right path. If they were all destroyed immediately, surely there would be no chance of repentance. In fact, the disasters that hit are a form of Allah's love for us as His creatures. If Allah willed, Allah is very capable to destroy them all, but He decides that it does not happen. Likewise, with the arrival of the COVID-19 outbreak. Oftentimes, we forget Allah in all aspects of our lives. With the COVID-19 pandemic, many people have been instructed by Allah to become better human beings, namely those who realize that this pandemic is a warning from Allah. Remember, if all human beings disbelieve Him, He has nothing to lose; if it applies otherwise, He will also not gain anything. So, all warnings are a form of Allah's love for His servants. Even so, when Allah sent COVID-19 to come to the world, it means that we are obliged by Allah to repent to Him again and are also obliged to try to be careful so that we are not exposed to COVID-19. The motivation for the *ikhtiar* (efforts) that are carried out is not because of the excessive fear but as a form of self-servitude to Allah and in order to run the commands of Allah. Once again, we can see this Allah's information in Q.S. Al-Baqarah verse 26 earlier, which reads *for those who believe, they know that it is the truth from Allah*. So, everything comes from Allah SWT. Thus, with or without COVID-19, we can be better human beings, who are always praying and *dhikr* to Him, just like His other creatures, in the form of animals and plants, who also always glorify Him by reciting *tasbeeh*.

Finally, the existence of the COVID-19 outbreak, if we address it with the right perspective, will make us better human beings, either to other human beings or to all of nature (*Rahmatan Lil 'Alamin*). At least, in terms of health and hygiene, human beings are more aware of cleanliness and take

اِنَّ فِيْ خَلْقِ السَّمٰوٰتِ وَالْاَرْضِ وَاخْتِلَافِ الَّيْلِ وَالنَّهَارِ لَاٰيٰتٍ لِّاُولِى الْاَلْبَابِ

behind this pandemic is

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الَّذِيْنَ يَذْكُرُوْنَ اللّٰهَ قِيَامًا وَّقُعُوْدًا وَّعَلٰى جُنُوْبِهِمْ وَيَتَفَكَّرُوْنَ فِيْ خَلْقِ السَّمٰوٰتِ وَالْاَرْضِ رَبَّنَا مَا خَلَقْتَ هٰذَا بَاطِلًا سُبْحٰنَكَ فَقِنَا عَذَابَ النَّارِ

standing, sitting, and lying on their sides, and reflect on the creation of the heavens and the

earth ˹and pray˺, "Our Lord! You have not created ˹all of˺ this without purpose. Glory be to You! Protect us from the torment of the Fire.

As sensible people who use their mind, we should consider and believe that all the things, both in heavens and earth, are from Allah, and Allah creates them for nothing but a purpose; likewise, the COVID-19 outbreak. The virus, apart from being seen as a disaster, can also be seen as something good. To be sure, Allah must have a secret that we may not know, but we must believe that everything is okay. With the right perspective, a reasonable person will think that this plague is the love of Allah. Thus, hopefully, we are those who are protected by Allah from the punishment of hell. Amen.

And Allah knows everything.

Lack of Public Awareness during The COVID-19 Pandemic

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ABSTRACT

COVID-19 pandemic in Indonesia is a part of global pandemic that is occurred around the world. Lockdown is echoed as a good alternative to overcome the case of COVID-19 outbreak in several countries. However, the Indonesian government did not adopt this policy. The President of Indonesia stated that the government did not choose lockdown as an alternative because it would disrupt the economy. The Indonesian government prefers to impose Large-Scale Social Restrictions (PSBB). The COVID-19 pandemic forces people around the world to change their behavior to prevent the spread of the virus, including in Indonesia. The health protocols were formulated to protect humans from the transmission of COVID-19. However, many people do not respond this health protocols well. There is a lack of public awareness on the importance of health protocols and the dangers of COVID-19.

Keywords: COVID-19, public awareness, the health protocols

PRELIMINARY

COVID-19 pandemic in Indonesia is part of global pandemic that is occurred around the world. The World Health Organization (WHO) states that this disease comes from the Coronavirus (CoV) which causes illnesses ranging from flu to more severe ones such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV). This disease was identified as being caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2).

The first positive case of COVID-19 in Indonesia was detected on March 2, 2020, when two people had tested positive for the novel coronavirus disease from a Japanese citizen. The pandemic has spread to 34 provinces in Indonesia as of April 9, 2020, with DKI Jakarta, East Java, and Central Java as the top three provinces with the most COVID-19 cases. As of November 2020, the number of confirmed COVID-19 cases in Indonesia reached 538.883 cases with a total of 16.945 patients died (Sari & Dian, 2020).

Lockdown is echoed as a good alternative to overcome the cases of COVID-19 outbreak in several countries. However, the Indonesian government does not adopt this policy (Pranita, 2020). The President of Indonesia stated that the government did not choose lockdown as an alternative because it would disrupt the economy. The government prefers to impose Large-Scale Social Restrictions (PSBB). With this scheme, economic activity will continue running, but there are still some other restrictions to prevent the spread of COVID-19. For example, the implementation of work and study from home as well as prayer at home in the vulnerable areas. People who are forced to leave their homes are also reminded to adhere to keep their distance from each other (Ihsanuddin, 2020).

The Indonesian government through the National Disaster Management Agency (BNPB) has established the disaster emergency status starting from February 29, 2020 to May 29, 2020 (Koesmawardhani, 2020). The policy taken by Indonesian government in order to overcome the COVID-19 pandemic is the Large-Scale Social Restrictions (PSBB). Regulations regarding Large-

Scale Social Restrictions (PSBB) in order to accelerate the handling of COVID-19 are stipulated through government regulation no 21 of 2020 which was established on March 31, 2020. Local Governments (PEMDA) can implement Large-Scale Social Restrictions (PSBB) for a particular province or district/city. The PSBB is carried out by the proposal of the governor/regent/mayor to the Minister of Health. Minister of Health Regulation No. 9 of 2020 concerning Guidelines to Large-scale Social Restrictions in Accelerating COVID-19 Mitigation set on April 3, 2020. PSBB policies include: 1) The closure of both schools and workplaces; 2) Limitations of religious activities; 3) Limitations on activities in public places/facilities; 4) Limitations of socio-cultural activities; 5) Limitations on transportation modes; and 6) Restrictions on other activities related to defense and security aspects (Indonesia, 2020).

Community reactions have varied after COVID-19 was declared as a pandemic, such as feeling afraid, angry, panicky, confused, and sad. COVID-19 cause people to experience trauma and an atmosphere of threat and fear (Tuwu, 2020). There are four types of trauma caused by COVID-19, namely: (1) individual trauma that appears in the form "social withdrawal" in which suspected COVID-19 patients or victims of work contract termination have a tendency to isolate themself from their peers and social environment; (2) individual trauma namely "hysteria"; (3) psychological trauma "violence act"; and (4) psychological trauma that is "collective attachment" as a response to the mass panic experienced by the community (Abdullah, 2020).

DISCUSSION

The COVID-19 pandemic forces people around the world to change their behavior to prevent the spread of the virus, including in Indonesia. The health protocols are formulated to protect humans from the transmission of a virus which is scientifically called Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). These health protocols include wearing a mask, washing hands frequently, and maintaining physical distance from other people. In order to ensure that the public is protected by this health protocol, the government has issued several regulations (Halim, 2020).

Many steps have been taken by the government in order to resolve the COVID-19 pandemic. One of them is by socializing the Social Distancing movement. This concept explains that in order to reduce or even break the chain of COVID-19 infection, people must maintain a safe distance from others of at least 2 meters, and must not make direct contact with other people as well as avoiding mass gatherings (CNN, 2020). However, many people do not respond to this well, for example, the government has decided that learning activities is conducted from home or enforcing work at home, but this condition is used by many people to go on vacation (Malik, 2020). On the other hand, there are still many Indonesians who underestimate this virus by disregarding the government's appeals (Buana, 2020).

Panic buying hit Indonesian society in the beginning of the implementation of PSBB. According to Dicky Pelupessy, Chairperson of the Crisis Center of the University of Indonesia/Deputy secretary-general of the Indonesian Association of Disaster Experts (IABI), the behavior of Indonesian to

suddenly buy goods in large quantities (panic buying) is caused by the corona novel virus (COVID-19) pandemic, in addition to the circulation of unclear or incomplete information. The incomplete information causes public anxiety to arise (Sulistyawat, 2020). Meanwhile, according to Enny Sri Hartati, Executive Director of the Institute for Development of Economics and Finance (INDEF), there are two forms of worry that occur in society. The first is worrying that if you don't shop now, the price of goods may rise the next day. Second, if you don't shop now, the goods won't be there the next day (Syafina, 2020).

Disobeying health protocols and panic buying is part of human selfishness. This can happen because the individual is not fully aware of the pandemic conditions that have occurred. From the results of the Community Behavior Survey during the COVID-19 Pandemic (September 7-14, 2020) by BPS, it is obtained the following information**:**
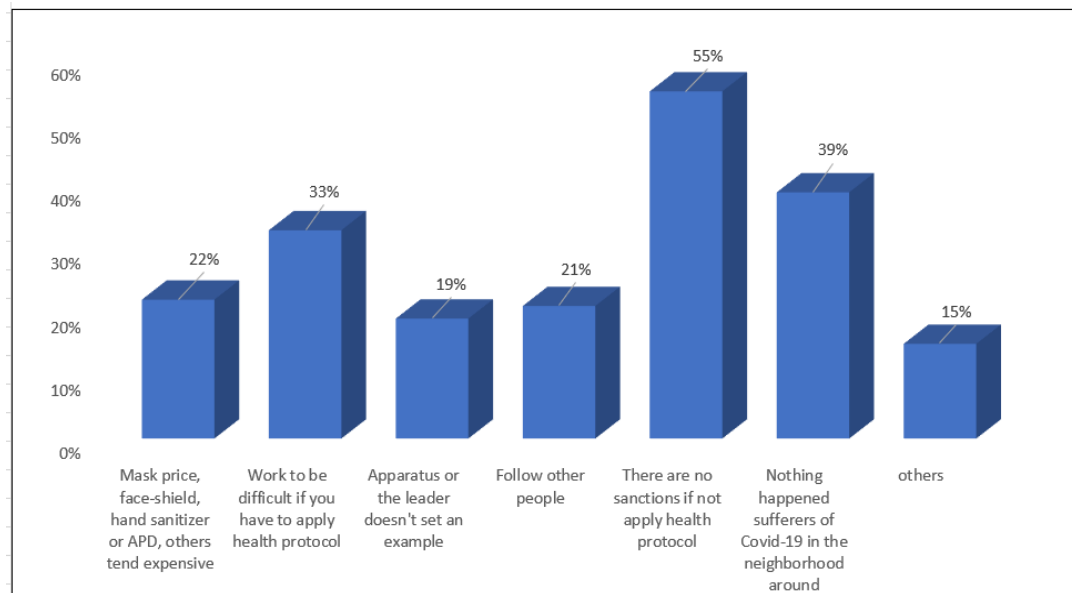
Figure 1. The reasons the community does not to practice the health protocols (BPS, 2020)

Based on Figure 1, it is known that more than half respondents (55%) argue that no sanctions given is the reason why the society does not practice health protocols. The other reason of not to observe the health protocols is the lack of public awareness, as shown in the word cloud in Figure 2:

Figure 2. Word cloud of other reasons to not practice the health protocol (BPS, 2020)

Meanwhile, the public's perception of the possibility of being contracted COVID-19 can be seen in Figure 3. The pie chart shows that 17 out of 100 respondents state that it is very impossible to be contracted the coronavirus.
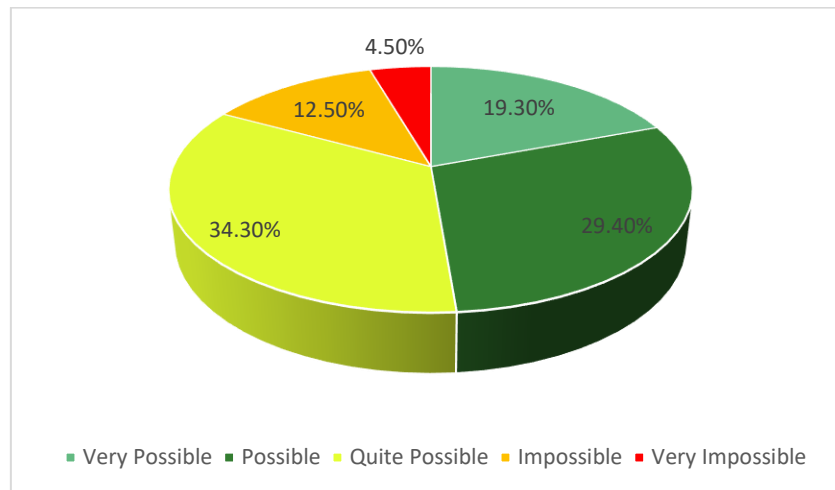

Figure 3. The public's perception of the possibility of COVID-19 infection (BPS, 2020)

The results of a survey conducted by BPS provide information about the lack of public awareness on the importance of the health protocols and the danger of COVID-19. Even though the number of infected people and patients who died continues to grow every day, many people are still ignorant.

Imam Prasodjo, Sociologist at the University of Indonesia (UI), stated that the application of punishment can be one of the driving forces for the community to implement health protocols. However, this is not enough to change people's behavior. There are several stages in order to change people's behavior. First, the importance of people's understanding about the benefits of health protocols for themselves and others. Second, people need to be motivated to observe the health protocols. Third, people's ability to implement health protocols, including from a physical and economic standpoint. Fourth, the availability of supporting facilities for practicing health protocols such as hand washing

stations that are accessible for the public. Fifth, social drive in the form of applicable regulations accompanied by the authority's supervision (Halim, 2020).

CLOSING

There is no human being that wants this COVID-19 pandemic to emerge in the world. Everyone certainly hopes that this pandemic will end soon. However, that hope will be difficult to reach if humans continue to neglect the implementation of health protocols. Please remember that the implementation of health protocols is a form of effort to avoid COVID-19 infection, as Allah SWT says in Q.S. Ar-Ra'd (13):11,

إِنَّ اللَّهَ لَا يُغَيِّرُ مَا بِقَوْمٍ حَتَّىٰ يُغَيِّرُوا مَا بِأَنْفُسِهِمْ ۗ وَإِذَا أَرَادَ اللَّهُ بِقَوْمٍ سُوءًا فَلَا مَرَدَّ لَهُ ۚ وَمَا لَهُمْ مِنْ دُونِهِ مِنْ وَالٍ

"Indeed, Allah does not change the condition of a people so that they change the condition that

is in themselves. And if Allah wants something bad for a people, then no one can refuse it; and there

is no protector for them but Him"

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Indonesian News About COVID-19: The Hope and Reality

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ABSTRACT

Coronavirus disease causes immense changes in the world. After nearly a year of fighting against COVID-19, Indonesia must now restore its economy, education, tourism, and industry. In December 2020, several significant events occurred, such as the arrival of the COVID-19 vaccine, integrated Regional Head Elections (Pilkada: *Pemilihan Kepala Daerah*), and preparation for year-end holidays. Finding out about Indonesia's developments related to COVID-19, we took news data from 3 popular news media in Indonesia. We employed the LDA (Latent Dirichlet Allocation) model to extract news topics automatically. Based on the analysis, there were four main topics related to COVID-19 news: the plan to use and distribute COVID-19 vaccines in Indonesia, the controversy over the Pfizer vaccine, COVID-19 updates per-region in Indonesia, and preparation for year-end holidays.
Keywords: COVID-19 news, LDA, tabbayun, topic extraction

INTRODUCTION

Health is one aspect of life that is very important for all of us. However, Indonesia's citizens' (even worldwide) current condition is no good due to the COVID-19 disease attack caused by the SARS-CoV-2 virus, known better as the coronavirus. This virus attacks the respiratory system, so it is likely to be fatal and lead to death. China is the country detected as the epicenter of the coronavirus spread. At the beginning of March, there were only two Indonesian people that were infected. Because of the very fast-spreading virus, the number of cases increases exponentially. As of December 17th, there are 629,000 confirmed cases, 517,000 recovered cases, and 19,111 deaths.

In December 2020, there are some crucial events in Indonesia, the Pilkada (*Pemilihan Kepala Daerah*/Regional Head Elections). Pilkada 2020 takes place simultaneously on December 9th, 2020. Even though it causes polemic as the number of confirmed cases continues to climb, the government continues this program. It is feared that the implementation of the Pilkada will lead to a new COVID-19 cluster, considering that the election procedure involving many people. Even so, several parties want the Pilkada activities to carry on with some considerations. Efforts are being made to prepare health protocols such as wearing masks, washing hands, and maintaining distance, which must be obeyed to prevent COVID-19 transmission.

On the other hand, the government makes an effort to strive for the availability of vaccines to end the corona pandemic even though it still has to go through various stages and processes that require time. It is expected that this vaccination could slow down the infection of COVID-19 in Indonesia.

Most of the people feel anxious as the people infected with COVID-19 have been mounting up. However, as a religious community, the COVID-19 pandemic have become an opportunity to gain various major charities and worship to God, also kindness to fellow humans—as exemplified by the Prophet Muhammad when there was a pandemic that infected many people in his days. According to Dr. Drs. Asmuni Mth, MA., Lecturer in Islamic Law and Director of the Islamic Boarding School of the Islamic University of Indonesia, based on historical records, there had been disease outbreaks during the time of the Prophet and his companions. Although not as deadly as COVID-19, the epidemics also spread quickly and caused many people to be affected. At that time, one of the outbreaks that often occurred was leprosy. As a precautionary measure, the Apostle ordered not to be close to sufferers or areas affected by the plague. The concept of regional quarantine is expressed in HR Bukhari, which means: "If you hear about an epidemic in an area, then do not enter it. But if there is an epidemic from where you are, then do not leave your place".

Everything related to the coronavirus is interesting to report. The news is filled with daily case updates (active cases, recoveries, and deaths). Besides, the media also writes about the economic decrease, people's behaviour amid pandemic, adaptation to new normal, vaccines, and drugs.

Since the pandemic, hoaxes and false information have circulated in the community. The media also compete to increase their readers' interest by creating attractive titles - even if they are not representative of the content. The catchy title tends to lure readers into clicking their link. Such headlines are known as *clickbait*. Public enthusiasm for coronavirus news has the potential to lead to the creation of the new clickbait (Bourgonje et al., 2018; Chakraborty et al., 2016).

This research employed the Latent Dirichlet Allocation (LDA) method to automatically find latent topics in several documents (Bashri & Kusumaningrum, 2017; Campbell et al., 2015; Chen et al., 2016). This method is a topic extraction that can handle words, documents, and corpus. While its previous method, Latent Semantic Indexing (LSI), works only at the words and document level.

By finding the topics on the news media, we quickly gained information about what was happening in Indonesia. As intuitively comparing the topics generated from its headlines and its content, we checked whether the headline reflected its content. This way also indirectly made early detection of clickbait since there was no mathematical reason underlying the conclusion.

METHODOLOGY

The data used in this study was news from three popular news media in Indonesia that were *Kompas*, *Liputan6*, and *Kumparan*. We collected about 60 news on December 13rd 2020. Below is the flowchart of methodology of this study.
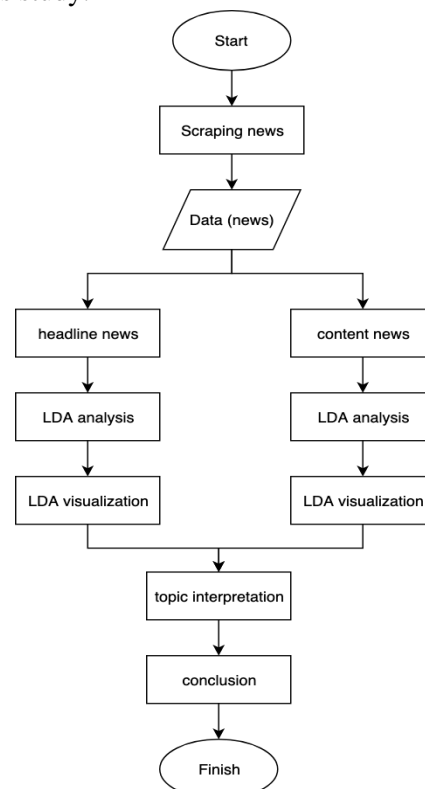

Figure 1. Research Flowchart

We collected news from both headlines and paragraphs as of that date (December, 13rd 2020). After that, we conducted a similar separated analysis of headlines and paragraphs using the LDA model.

This model extracted topics automatically by presenting them into groups of words. However, the interpretation of this group of words was made manually. Graphics of LDA models, which were the dimension reduction using PCA (Principal Component Analysis) and word clouds, were built to give visualization. Matching the headline topics and the paragraph's topics become an early step to confirm whether the news was categorized as clickbait. This method was indirect detection because there was no mathematical reason. The last step was concluding.

Latent Dirichlet Allocation (LDA) is a generative probabilistic model of a corpus. The basic idea is that documents are represented as random mixtures over latent topics, where each topic is characterized by a distribution over words. There are some terms in LDA (Blei et al., 2001, 2002; Huang & Wu, 2015; Wu et al., 2015):

1. Words are the basic units of discrete data, defined as items of the vocabulary indexed by $\{1, 2, \ldots, W\}$
2. Document is a sequence of N words denoted by $d = (w_1, w_2, \ldots, w_N)$, where w_n is the nth word in the sequence.
3. A corpus is a collection of M documents denoted by $C = \{d_1, d_2, \ldots, d_M\}$.

LDA is employed to find a probabilistic model of the corpus that gives a high probability to members of the corpus and gives a high probability for other "similar" documents.

The marginal probabilities of single documents, and gain the probability of a corpus (Blei et al., 2001, 2002; Campbell et al., 2015):

$$p(D|\boldsymbol{\alpha}, \boldsymbol{\beta}) = \prod_{d=1}^{M} \int p(\theta_d|\alpha) \left(\prod_{n=1}^{N_d} \sum_{y_{dn}} p(y_{dn}|\theta_d) p(x_{dn}|y_{dn}, \beta) \right) d\theta_d$$

The parameters α and β are the parameters of the corpus level. It is assumed that samples are taken once in the corpus generation process. The θ_d variable is the document level variable, sampled once per document. The y_{dn} and x_{dn} variables are word-level variables and are sampled once for each word in each document.

DISCUSSION

Firstly, we did a pre-process to make the text ready to be analyzed. Pre-processing included case folding, tokenizing, filtering, and stemming. The case folding process involved lowercasing, eliminating punctuation, numbers, and extra whitespaces. The tokenizing process was to turn each word into a single data. The filtering was to filter the meaningless words called stop words. Meanwhile, stemming was the process of returning the word into the basic word.

Table 1. The Example of Pre-Process Text

The original text	Case folding process	Tokenizing	Filtering	Stemming
10 Provinsi Mencatat Angka Sembuh Corona Lebih Tinggi dari Positif COVID-19 per 13	provinsi mencatat angka sembuh corona lebih tinggi dari positif COVID per Desember	provinsi, mencatat, angka, sembuh, corona, lebih, tinggi, dari, positif, COVID, per,	provinsi, mencatat, angka, sembuh, corona, positif, desember	provinsi, catat, angka, sembuh, corona, positif, desember

Desember 2020   Desember

Our corpus had 63 pairs of headlines and paragraphs to make a dictionary. In order to avoid too many unique words, we set limitations. The unique text was included in the dictionary when it was contained in at least two documents and contained in no more than 60% of the documents. The headlines had only 50 unique tokens, while the paragraphs had 959 unique tokens.

The number of topics (k) built in the LDA model is determined using coherence values. This value measures the score of a single topic by measuring the degree of semantic similarity between high scoring words in the topic. The higher the coherence value, the better the number of topics is.
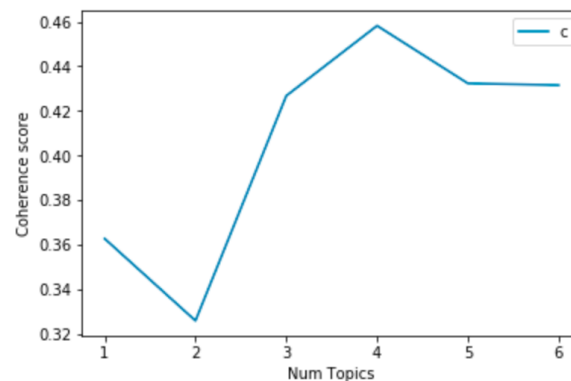
Figure 2. Coherence Value

The optimal number of topics for paragraphs is 4 and so is for the headlines. We decided to use the same number of topics because we wished to compare the topics of the headlines and paragraphs.

Table 2. The LDA model for headline

k	The model	Interpretation
1	**0.071*"pasien"** + **0.069*"vaksinasi"** + 0.061*"kota" + **0.047*"vaksin"** + **"0.045*"uji"** + 0.045*"corona" + **0.040*"bogor"** + 0.037*"natal" + 0.037*"misa" + 0.032*"muka"''	*Simulasi vaksinasi COVID-19 di kota Bogor* Simulated COVID-19 vaccination in the city of Bogor
2	**0.061*"desember"** + **0.054*"sembuh"** + **0.054*"tambah"** + **0.054*"corona"** + **0.044*"positif"** + **0.043*"lonjak"** + **0.039*"update"** + 0.037*"ri" + 0.036*"jual" + 0.036*"rp"	*Kasus COVID-19 di Bulan Desember* COVID-19 cases in December
3	0.076*"jalan" + 0.069*"ulang" + **0.049*"jateng"** + 0.043*"tingkat" + **0.042*"papar"** + 0.**037*"aktif"** + **0.037*"update"** + 0.035*"bri" + 0.033*"desember" + 0.033*"lonjak"	*Update kasus COVID-19 per daerah* Update on COVID-19 cases per region/province
4	**0.098*"vaksin"** + 0.055*"sakit" + **0.047*"pfizer"** + **0.047*"amerika"** + 0.040*"barat" + 0.040*"papua" +	*Kontroversi vaksin pfizer*

0.037*"ri" + 0.037*"pesantren" + 0.033*"tinggal" + 0.029*"desember"	The pfizer vaccine controversy

Based on Tabel 2., the topics related to COVID listed on the headline are the vaccination, the increasing number of COVID-19 cases, a prominent condition update, and the use of Pfizer vaccine. The bolded words and its probability support the interpretation of the related topics. For example, the probability of "pasien" and "vaksinasi" is 0.071 and 0.069 respectively for topics *Simulasi vaksinasi COVID-19 di kota Bogor* (Simulated COVID-19 vaccination in the city of Bogor).
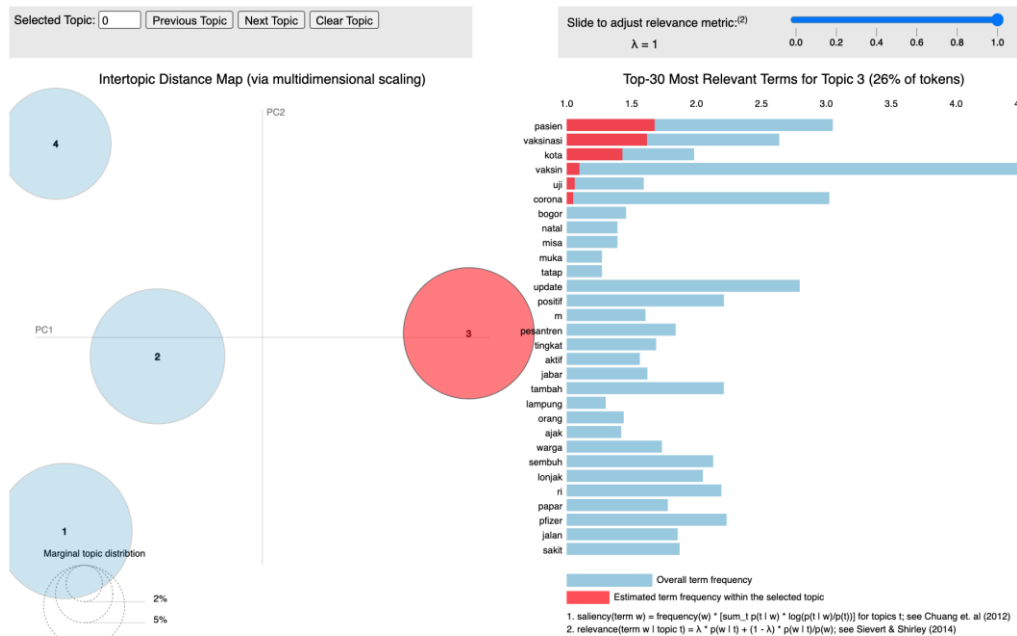
Figure 3. LDA visualization of headlines

The 2D-graph of the topics as visualized in Figure 3 is obtained using two principal components (PC1 and PC2). The intertopic distance map measures the distance between topics using PCA (Principal Component Analysis). The width of the blue bar represents the frequency of the corpus width for each term and the width of the red bar represents the topic-specific frequency of each term. The bigger the circle is, the more important the topics to the whole corpus is.

The relevance of a term to a topic allowed users to flexibly rank terms in order of usefulness for interpreting topics. In Figure 3., circle 3 shows that the rank of the words "pasien", "vaksinasi", "kota", "vaksin", "uji", etc are relevant to topic number 1. The following is the word cloud for topic.

Figure 4. Word cloud of headlines topics

The following analysis is extracting paragraph topics. Using a similar model as used in the headline, we acquired four topics.

Table 3. The LDA model for paragraph

k	The model	Interpretation
1	**0.008*"vaksin"** + **0.005*"tambah"** + **0.005*"sembuh"** + 0.004*"orang" + **0.004*"bogor"** + 0.004*"lapor" + 0.003*"jawa" + 0.003*"total" + **0.003*"pasien"** + 0.003*"bambang"	*Simulasi vaksinasi COVID-19 di kota Bogor* Simulated COVID-19 vaccination in the city of Bogor
2	**0.004*"pasien"** + **0.004*"vaksin"** + **0.003*"pfizer"** + **0.003*"jual"** + 0.003*"pesantren" + 0.003*"protokol" + 0.003*"zona" + 0.003*"lonjak" + 0.003*"pekan" + 0.003*"humas"	*Kontroversi vaksin pfizer* The pfizer vaccine controversy
3	**0.005*"sembuh"** + **0.003*"kalimantan"** + **0.003*"sulawesi"** + **0.003*"vaksin"** + 0.003*"positif" + **0.003*"bangka"** + **0.003*"kabupaten"** + 0.003*"bri" + 0.003*"tinggal" + **0.002*"gorontalo"**	*Update kasus COVID-19 per daerah* Update on COVID-19 cases per region/province
4	**0.003*"libur"** + **0.003*"wisata"** + 0.003*"lingkung" + 0.003*"terbang" + 0.003*"bersih" + 0.003*"turun" + 0.002*"solo" + 0.002*"tumpang" + 0.002*"global" + **0.002*"teliti"**	*Persiapan menjelang libur akhir tahun* Preparation for the end of the year holidays

Based on Tabel 3, each word's probability on every model of the news paragraph has a smaller value due to the higher number of unique tokens/words compared to that probability on the headline topics. The bolded words of each model represent the main words that support the interpretation of concerning topics.
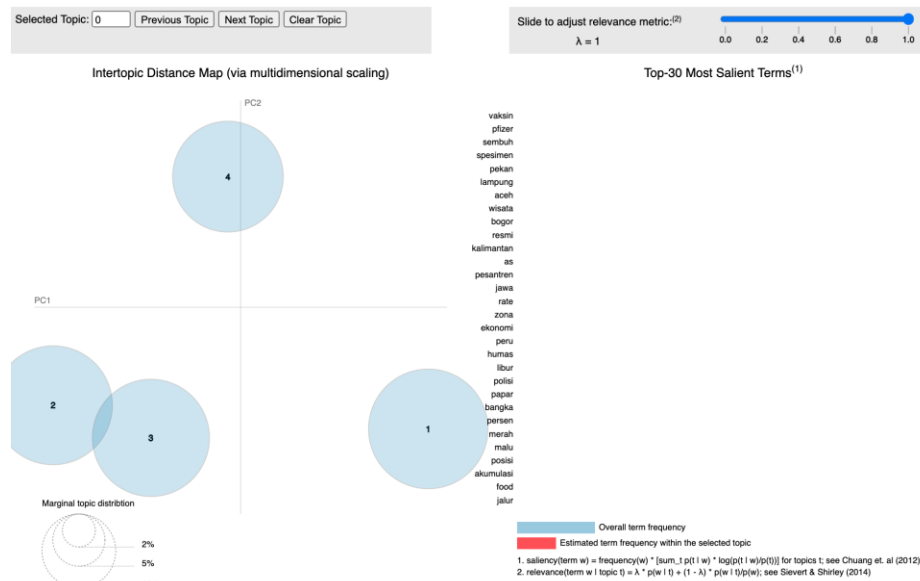
Figure 5. LDA visualization of paragraph

Based on Figure 5., circle 2 and 3 have an intersection, meaning that these two topics have something in common. Circle 2 represents the second topic about the controversy of the Pfizer vaccine, while circle three represents the first topic about simulation vaccination in Bogor. These two topics both discuss vaccines.

Figure 6. Word clouds of paragraph

The word clouds make it easier to visualize the primary words of each topic.

By comparing the topics obtained from the headlines and news paragraphs, we conducted early detection of clickbait. The four topics of the title have similarities to the topics in the paragraph. Meanwhile, there is one topic regarding preparing year-end holidays in the paragraph that cannot be

captured from the title. It shows us that the news related to COVID-19 in digital mass media matches the title and content.

Islamic Values

At this time, it is effortless for hoax news to spread as the digital media continues to bloom. It is easier for people to get information through social media such as Facebook, Twitter, WhatsApp, Line, or YouTube. They also tend to share the information, even if it is hoaxes or fake news. As the media facilitates the acts by providing a "share" or "pass on" button. Therefore, someone becomes an information courier by giving only a thumbs up or click that button.

Before spreading news or information, we must trace it carefully: where the statement comes from, who the author is, when it happened, or whether it is by the actual incident or not. Moreover, we can compare the news sources with one another to know which news is the real news and which is not. The importance of *tabayyun* when receiving news is to avoid making a mistake by believing fake information since it harms society. The public becomes anxious when there is scary news, even though the truth has not been proven. Sometimes people prefer to believe fake news rather than finding the facts. It could be that fake news is made on purpose to destroy someone's prestige or to fail someone's business. In the afterlife, Allah asks for the accountability of our acts. It is not only for the newsmakers but also for those who spread it. Allah says:
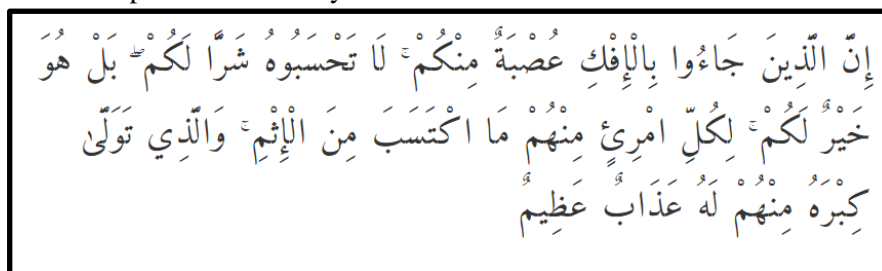
إِنَّ الَّذِينَ جَاءُوا بِالْإِفْكِ عُصْبَةٌ مِنْكُمْ ۚ لَا تَحْسَبُوهُ شَرًّا لَكُمْ ۖ بَلْ هُوَ خَيْرٌ لَكُمْ ۚ لِكُلِّ امْرِئٍ مِنْهُمْ مَا اكْتَسَبَ مِنَ الْإِثْمِ ۚ وَالَّذِي تَوَلَّىٰ كِبْرَهُ مِنْهُمْ لَهُ عَذَابٌ عَظِيمٌ

Figure 7. Quran Surah An-Nur 24: 11

"Indeed, those who came up with that outrageous slander are a group of you. Do not think this is bad for you. Rather, it is good for you. They will be punished, each according to their share of the sin. As for their mastermind, he will suffer a tremendous punishment." (Surah An-Nur [24]: 11).

CONCLUSION

This research is an effort to do *tabbayun* on digital mass media. The data used from various sources are analyzed to obtain conclusions statistically.

Based on the results of the analysis of topic extraction, there are four topics for both headings and paragraphs. Topics in the title include simulated COVID-19 vaccination in Bogor, COVID-19 cases in December, updates on COVID-19 cases per region/province, and the Pfizer vaccine controversy. The three topics in the paragraph are the same as the titles' topics, except the preparation for the end of the year holidays. The consistency of the headings and paragraphs' topic indicates that mass media coverage may not contain clickbait.

In Indonesia, where the COVID-19 cases are still high, the government has started a vaccination program. We hope that the spread of COVID-19, which is currently still going fast, can be slowed down with the vaccine. Moreover, the government is still trying to fulfill the citizens' rights to elect their

regional heads in this situation. However, the program reaps several pros and cons. Finally, citizens must not be careless about health protocols when celebrating or spending year-end holidays.

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Indonesian Mobility Visualization during COVID-19 Pandemic

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ABSTRACT

During the pandemic, the government issues various policies to control both the direct and indirect effects of COVID-19. The government, even WHO, suggests the citizens to stay at home and reduce outdoor activities, including work and school. This study used data provided by the BigQuery Public Datasets Program, Google Community Mobility Reports. This data contained mobility changes from a baseline (the mobility before the pandemic) of people worldwide during the pandemic. Data of Indonesian's mobility in each province was taken using a query and then combined with daily confirmed cases from *kawalcovid19*. This paper aims to determine the effect of population mobility on the number of daily confirmed cases displayed in visualization and gathered information from it. There were three mobility variables: the percentage change in mobility for retail, grocery, pharmacy, and workplace. The results of the visualization show that Jakarta has always been the province with the highest levels among several points, such as the number of patients, deaths, and population mobility.

Keywords: COVID-19, BigQuery Public Datasets, Visualization, Indonesian's Mobility.

Introduction

A descriptive analysis is an important first step for conducting statistical analyses. It gives you an idea of the distribution of your data, helps you detect outliers and typos, and enables you to identify the associations among variables, thus making you ready to conduct further statistical analyses. Visualizations are a new way to communicate information and make it easier for users to perceive. The reason is, as we know, people's responses to visual content are better since the brain processes visual information 60.000 faster than text (while it takes about ¼ second to process a symbol meaning, it takes about 6 seconds to read 20 words.) (Hanski, 2018). Many scientists are working tirelessly to find a treatment and a possible vaccine. Furthermore, government, scientific institutions, and companies are taking quick actions to make resources available, including funds and the opening of large-volume data repositories to accelerate innovation and discovery aimed at solving this pandemic.

A pneumonia-like illness caused by a new virus called the novel coronavirus (2019-nCov) was first discovered in Wuhan, China in December 2019. This disease has a speedy spread rate. In Indonesia, the first case occurred on March 1, 2020, as of December 18, 2020, there were 636,000 confirmed cases of coronavirus, 522,000 recovered cases, and 19,248 died cases. (Qandi & Rakhmawati, 2020)

In December, the government implements a coronavirus vaccine policy made by a Chinese company called Sinovac. At the first stage of import, the government urges the citizens not to be too euphoric since Dr. Dirga Sakti Rambe, the vaccinologist and internal medicine specialist, said that currently the Sinovac vaccine has not passed phase III of clinical trials and is still in the process of sending Emergency Use Authorization (EUA) from the National Agency of Drug and Food Control (BPOM).

During the pandemic, the government has issued various to control both the direct and indirect effects of COVID-19. The government, even WHO, suggests the citizens to stay at home and reduce

outdoor activities, including work and school. This study used data provided by the *BigQuery Public Datasets Program*, *Google Community Mobility Reports*. This data contained mobility changes from a baseline (the mobility before the pandemic) of people worldwide during the pandemic. Data of Indonesian's mobility in each province was taken using a query and then combined with daily confirmed cases from *kawalcovid19*. This paper aims to determine the effect of population mobility on the number of daily confirmed cases displayed in visualization and gathered information from it. There were six mobility variables: the percentage change in mobility retail, grocery, pharmacy, and workplace.

There are several studies related to COVID-19 visualization, such as Visualizing COVID-19 Research conducted by Bras et al. (2020); this is the first work that combines analysis and the visualization of large-volume literature datasets to highlight the impact of COVID-19 on many research communities. It presented analysis, used topic and visual information through different themes to summarize interesting aspects of the information inside the large volume of research literature. This analysis highlighted: (a) the development of research regarding social distancing for the first time in 70 years; (b) insights into cross-domain initiatives to understand the consequences of this unprecedented situation; (c) the evolution in medical topics; and (d) the unfolding of the pandemic through publications. We hope the methods and findings may be useful as a reference guide for similar systems, stimulate new ideas and directions of research, and help fight against this pandemic.

Visualization

In this section, we will discuss the results of the visualization that has been done using the help of Tableau software. The data used are data from August 1 to December 6, 2020. The idea is to compare the population mobility of 6 variables as of August 1 and December 6. These visualization results are expected to give an overview of the development of COVID-19 of population mobility in all provinces. The following pictures are the result of the visualization.
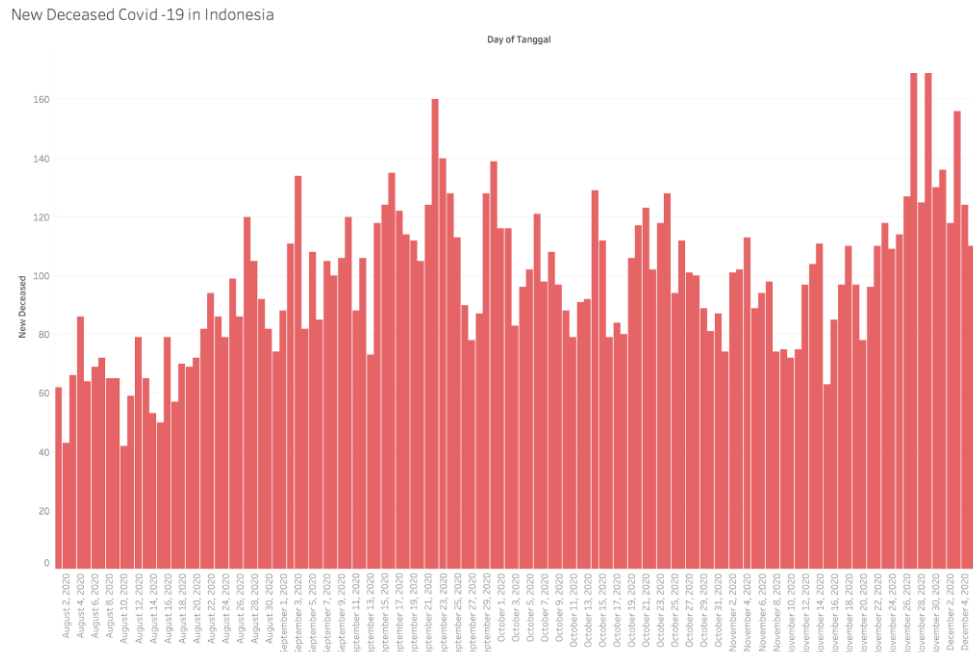
New Deceased Covid -19 in Indonesia

Figure 1. New Deceased COVID-19 in Indonesia

Based on Figure 1, the information was obtained during August - December, and there were two spikes which were respectively occurred in the third week of September and the last week of November. Quoted from Jakarta, CNN Indonesia - The number of confirmed positive cases of COVID-19 broke the highest record during September 2020 with a cumulative number of cases reaching 112,212 people. Figure 2 below portrays an interesting visualization where the height of the bar shows the number of new confirmed cases while the color shows the increase in the number of cases of patients who died on November 30, 2020.
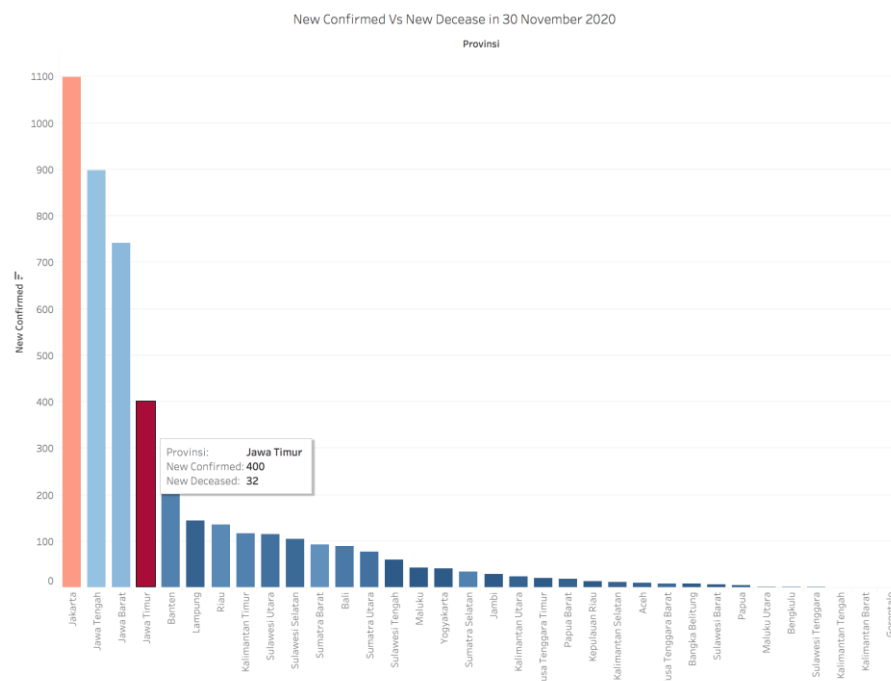
Figure 2. New Death Vs New Confirmed COVID-19 in Indonesia

Based on Figure 2., it can be concluded that East Java is the province with the highest mortality rate for COVID-19 patients in Indonesia, followed by Jakarta in the second place. The spread of COVID-19 development in Jakarta from day to day has indeed been observed to have increased quite significantly; this is due to Jakarta's position as the capital of Indonesia with a high population density. The following figure below is the visualization of the comparison between the number of new confirmed patients and patients who have recovered from August 1 - December 6.
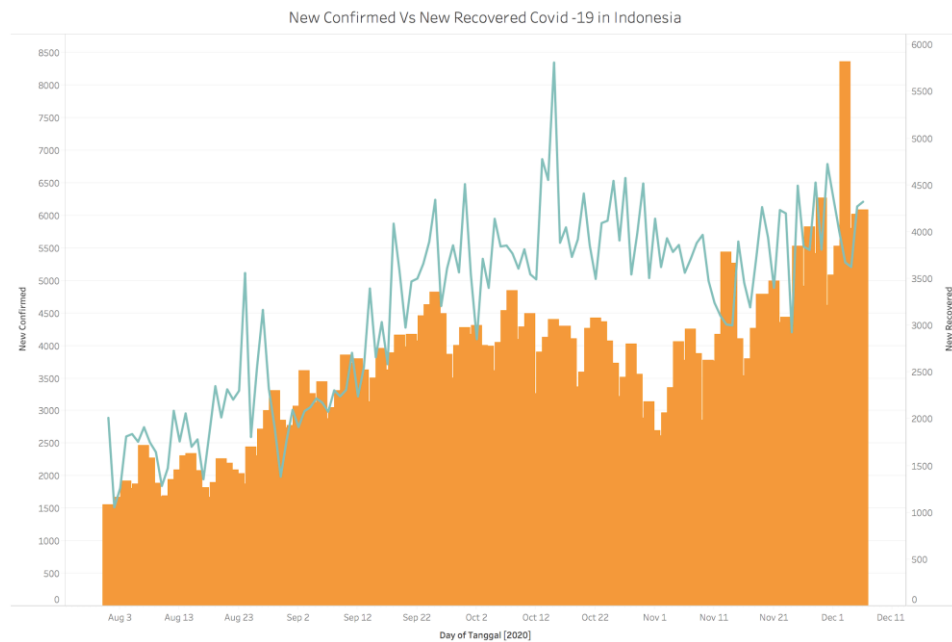
Figure 3. New Confirmed Vs Recovered COVID-19 patients in Indonesia

In Figure 3 above, the orange graphic shows the number of new cases while the blue one shows the number of recovered patients.

Based on the image above, it can be concluded that on November 13 and December 3, there was an increase in the number of positive patients compared to recovered patients. While on November 7 - October 12, the number of recovered patients was above the number of new patients. In this case, it is hoped that the number of new positive patients will decrease, and the number of recovered patients will increase until there are no more new patients added. Seeing the development of the spread of COVID-19, the government should take serious steps, such as the re-enactment of PSBB (Large-scale Social Restrictions). The following is a picture of the average ratio of deaths compared to deaths in each province.
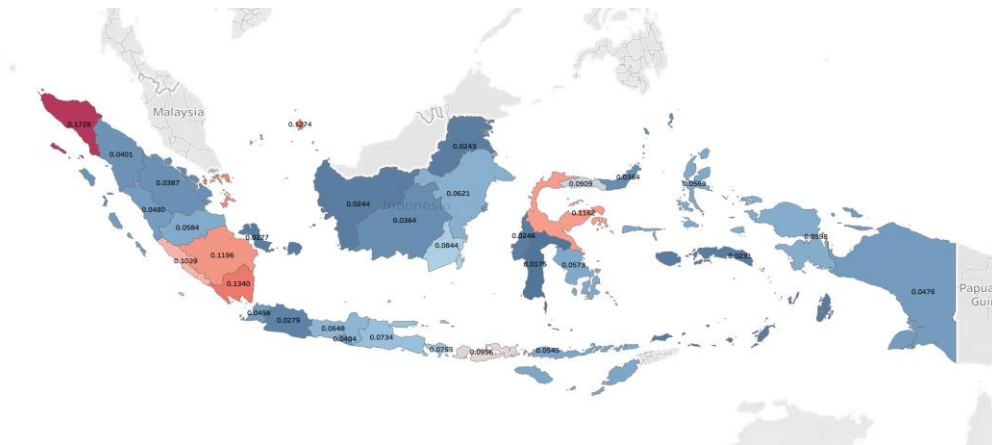
Figure 4. Ratio New Decease by New Recovered COVID-19 in Indonesia

Based on Figure 4, it is found that Aceh has the highest average mortality ratio compared to the average of recovered patients among other provinces. Quoted from Jakarta CNN Indonesia - The Task Force for the Acceleration of COVID-19 Handling noted that Aceh was the province with the highest increase in death cases due to the coronavirus in the last week or October 12-18 period. This condition also puts Aceh in the top position in the increase in COVID-19 death cases among the prioritized provinces for COVID-19 handling.

We will look at the population mobility in two significant places during the pandemic, namely supermarkets and pharmacies during August - December. The first visualization compares the mobility of the population who visited supermarkets and pharmacies on August 1 and December 6.
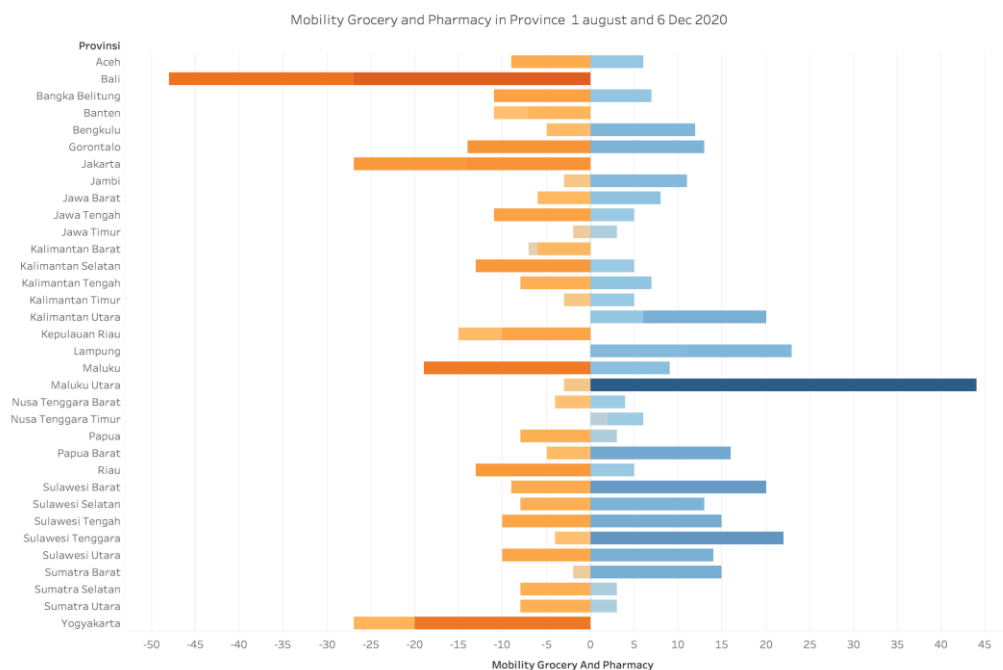

Figure 5. Mobility Groceries and Pharmacy

Based on Figure 5, it can be seen that there has been a very significant increase in almost all provinces except Bali and Jakarta. Bali and Jakarta do not really have an increase in the population

mobility to supermarkets and pharmacies. It is quite interesting to see the visualization of Bali and Jakarta, therefore we will take a look in more detail at the developments from day to day.
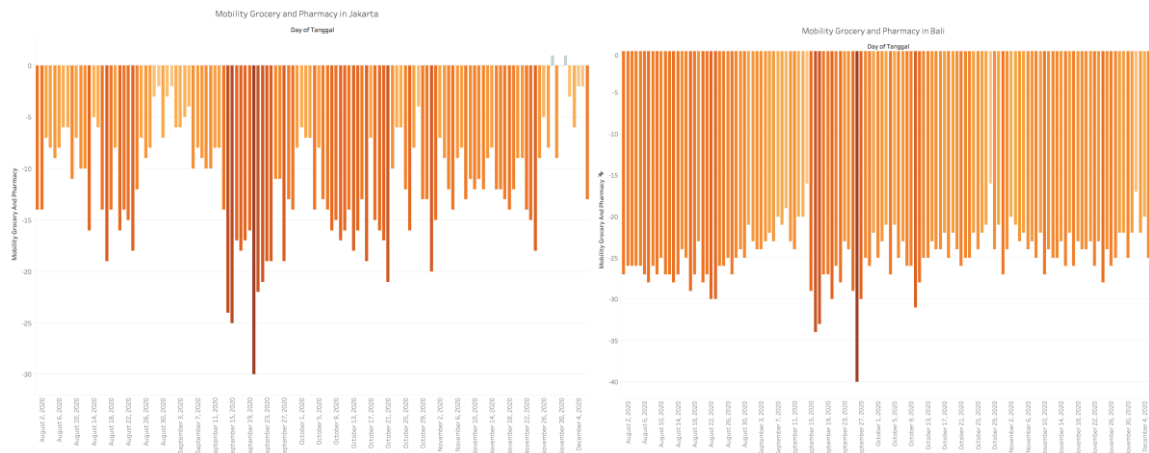

Figure 6. Mobility Groceries and Pharmacy in Jakarta and Bali

Based on the results in Figure 6., it is found that Bali has not had a significant change; in other words, it tends to be stable compared to Jakarta, which is more volatile. PSBB in Jakarta has indeed become a significant influence on the movement of the population to supermarkets and pharmacies. Both Bali and Jakarta have the same pattern in mid-September, that is a sharp decline in population mobility to supermarkets and pharmacies. Next is a visualization of population mobility in the retail sector.
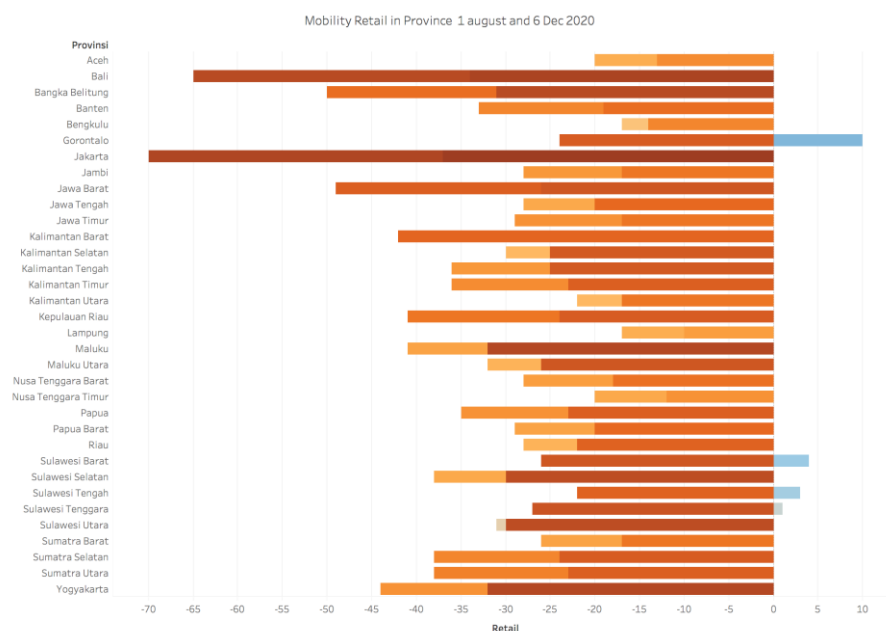

Figure 6. Mobility Retail Indonesia on August 1 and December 6, 2020

Based on Figure 6, it is found that in August, the rate of change in population mobility in the retail sector is still in a negative value; however, in each province, there is an increase in December. As for this retail mobility, Jakarta and Bali are again the top 2 provinces with the lowest retail mobility among other provinces. However, significant increases occur in the provinces in the Sulawesi Islands, namely

Gorontalo, West Sulawesi, Central Sulawesi, and Southeast Sulawesi. Next, it will be shown whether there is a relationship between population mobility in the workplace with new confirmed cases.
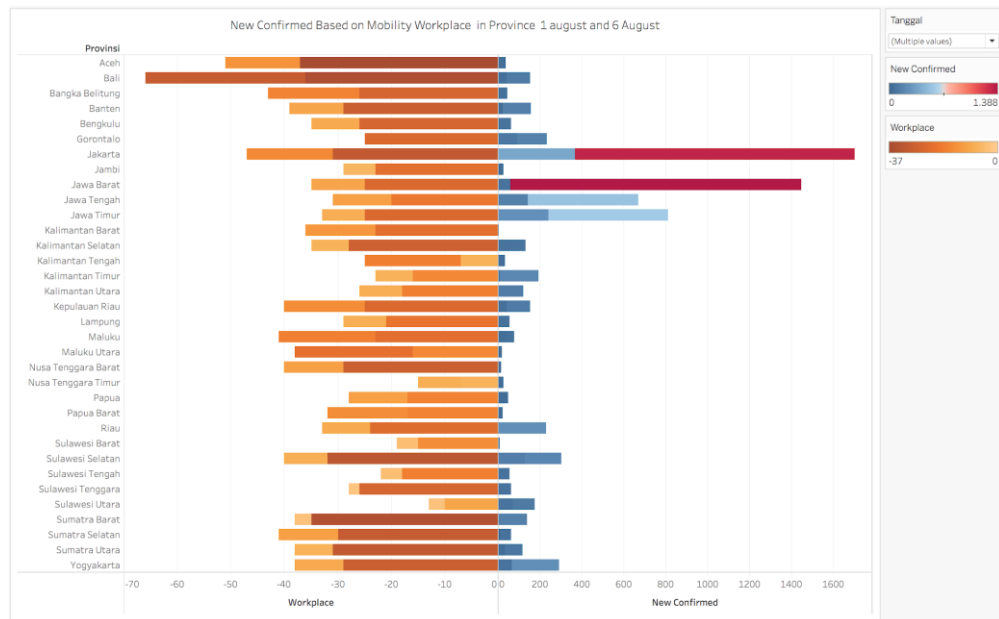

Figure 7. Mobility Workplace vs New Confirmed Cases in Indonesia on August 1, 2020

From Figure 7, it can be seen that in some provinces, the value has decreased. It means that the decrease in workplace activities also reduces the number of newly confirmed patients except for provinces in Java. Therefore, we will see the developments from day to day for the provinces in Java.
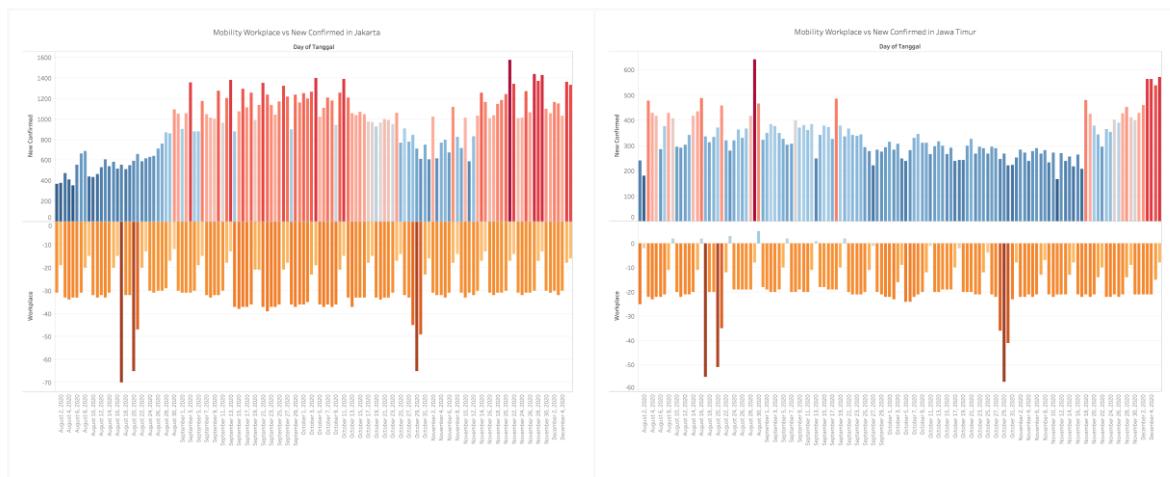

Figure 8. Mobility Workplace vs Newly Confirmed Case in Jakarta and East Java

Based on Figure 8, it can be seen that the pattern for workplace mobility looks the same and has experienced two sharp decreases that occurred in mid-August and late October. On the contrary, in Jakarta, the increasing number of positive patients with COVID-19 is more dominant. However, Jakarta Province experienced a significant decrease in the number of new COVID-19 patients in the last week of October, in line with a decrease in the level of population mobility in the workplace. This is similar to East Java; in the last week of October, it experienced a decrease.
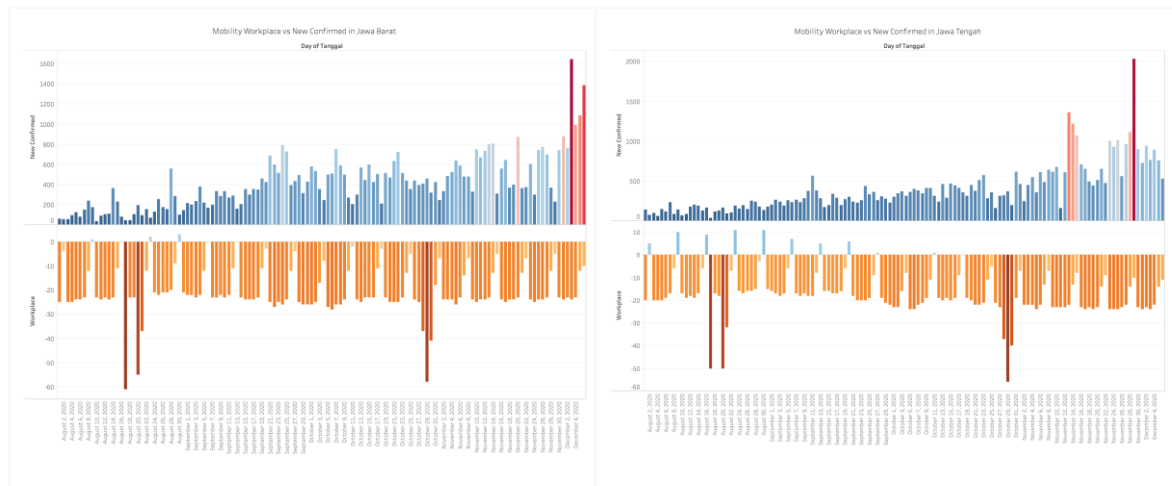
Figure 9. Mobility Workplace vs Newly Confirmed Case in West Java and Central Tengah

Slightly different from the two previous provinces, West Java and Central Java have a pattern that shows increases from day to day. This is what the provincial government must immediately anticipate the increase in the number of COVID-19 patients. The pattern for mobility in the workplace is still the same for each province since the working days that are applied to each province are still the same after the new normal period.

Conclusion

The results of the visualization show that Jakarta has always been the province with the highest levels in several points, such as the number of patients, number of deaths, and population mobility.

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